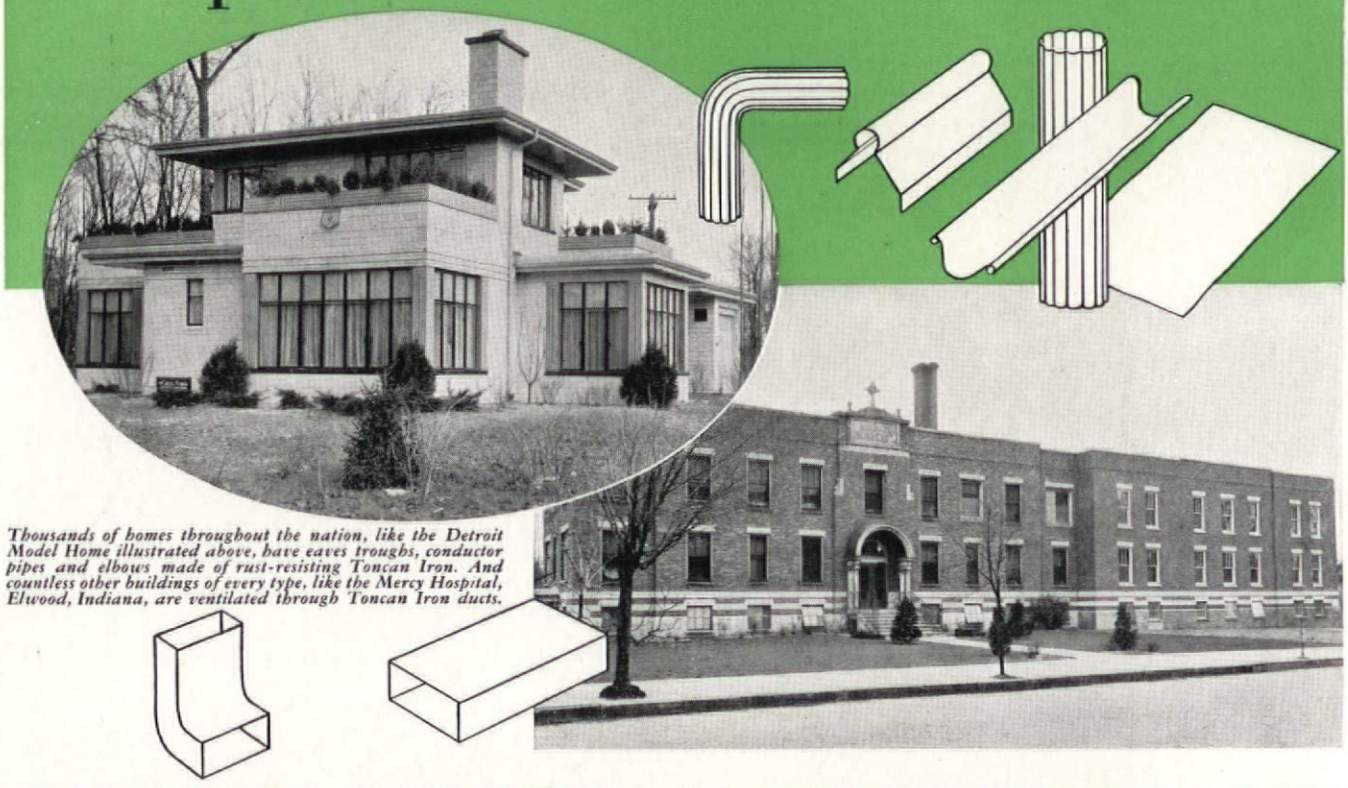
THE ARCHITECTURAL FORUM

INCLUDING "BUILDING MONEY"

SEPTEMBER, 1936

FAIRS ... HOUSES ... RAILWAY TERMINAL ... COST TECHNIQUES
APARTMENT ... THEATER ... BRITISH BUILDING BOOM II

A sound specification for exposed or hidden sheet metal work-



Thousands of homes throughout the nation, like the Detroit Model Home illustrated above, have eaves troughs, conductor pipes and elbows made of rust-resisting Toncan Iron. And countless other buildings of every type, like the Mercy Hospital, Elwood, Indiana, are ventilated through Toncan Iron ducts.

"TONCAN COPPER MOLYBDENUM IRON"

● Out in the open in the form of gutters, downspouts, eaves troughs, ridge roll, roofing, flashing or other sheet metal work, Toncan Iron resists the attacks of the elements—has established an unusual record during more than twenty-eight years of service.

Inside buildings, down in basements, hidden away in floors and walls where failure of sheet metal parts means considerable expense for replacement—there, too, Toncan Iron has proved its resistance to rust and its economy.

This alloy of refined open-hearth iron, copper and molybdenum is primarily a rust-resistant metal, possessing a higher degree of resistance to corrosion than any other ferrous material in its price class.

REPUBLIC STEEL
REG.U.S.PAT.OFF
TONCAN
COPPER MO·LYB·DEN·UM IRON

Republic produces a sheet for every degree of corrosion-resistance—plain carbon steel, copper-bearing steel, copper-bearing iron, Toncan Copper Molybdenum Iron and Enduro Stainless Steel.

Republic Steel
CORPORATION

GENERAL OFFICES · · · CLEVELAND, OHIO

VISIT THE REPUBLIC EXHIBIT AT THE GREAT LAKES EXPOSITION, CLEVELAND, OHIO, JUNE 27–OCTOBER 4

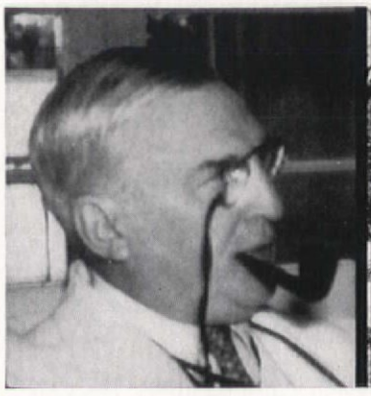
In addition, Toncan Iron is easy to fabricate—it cuts, bends, punches, solders and welds remarkably well. And cold-working has no material effect upon its high resistance to rust.

For long life and economy in sheet metal parts, specify Toncan Iron—the metal that is uniformly resistant to rust throughout its entire thickness. Write for a copy of "The Path to Permanence"—it tells the full story.

When writing Republic Steel Corporation for further information, please address Department A. F.

ARCHITECTURAL FORUM

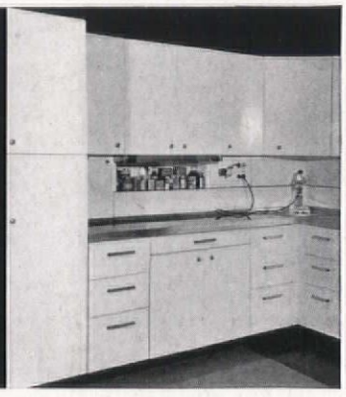
September 1936



Man of the Month



Building of the Month



Product of the Month

. . . cutting patterns for 1939 (pg. 171) . . . more than a Taliesin shadow (pg. 191) . . . integration via the back door (pg. 13)

FAIRS 171
Their lusty ancestry, their vigorous maturity, their present indecisiveness, and what of New York 1939? A critical, interpretative survey and forecast.

PORTFOLIO OF HOUSES 191
Five houses by Alden B. Dow notable for their organic design. Interior-exterior photographs . . . floor plans . . . critical comment . . . cost data . . . construction outlines.

COST TECHNIQUES 201
Second of a new series of technological studies of current cost practice in plan, design and construction.

RAILWAY STATION 205
The new terminal in Florence—evidence that Italy has not forgotten how to build in the grand manner.

CONTEMPORARY BUILDING 213
Portfolio presenting a small cinema from Marquette, Mich., an up-state New York utility office building, a fuel supply store in Poughkeepsie, and a seven-story Miami Beach apartment house.

BRITISH BUILDING BOOM PART II 222
Realty tax based on income . . . wages adjusted to living costs . . . 95 per cent mortgages . . . Government-depressed interest rate—the other half of Britain's current building phenomenon.

BUILDING MONEY 233
Queens, New York City, where 250 subdividers have housed 10,000 people in 10 months—who, what, why and how (234) . . . Portfolio No. 5 in the Remodeling For Profit series presents the metamorphosis of a Manhattan tenement and a Cleveland restaurant (240) . . . One man's idea, plus 99 friends, plus publicity, equal $100,000,000 in 15 months' building permits (244) . . . Debunking goes after the "quarter of your income for rent" theory (244) . . . Plywood and prefabrication in Louisville (248) . . . Pictures of the Month (254) . . . Charts of building's activity (256) . . . Contract for largest of U. S. housing projects goes to Starrett (36).

THE MONTH IN BUILDING 3
Front-page building news in quick summary.

FORUM OF EVENTS 9
Fort Worth Festival . . . A "small house" for Edward VIII . . . Sweden's Townsend Plan . . . Triboro from the air . . . Vimy Ridge Memorial . . . Revival in wallpaper.

PRODUCTS & PRACTICE 13
The new Arcode line of kitchen units . . . Automatic flush valve . . . Even distribution for hot water heat.

LETTERS 22
News from the Texas front . . . John Lloyd Wright on "High Cost Housing" . . . For Open Competitions.

BOOKS 30
Standardization and the house today . . . Specification, 1936 . . . Old missions in Texas . . . A comprehensive book on modern theater design . . . History of furniture and decoration . . . Hellenistic architecture.

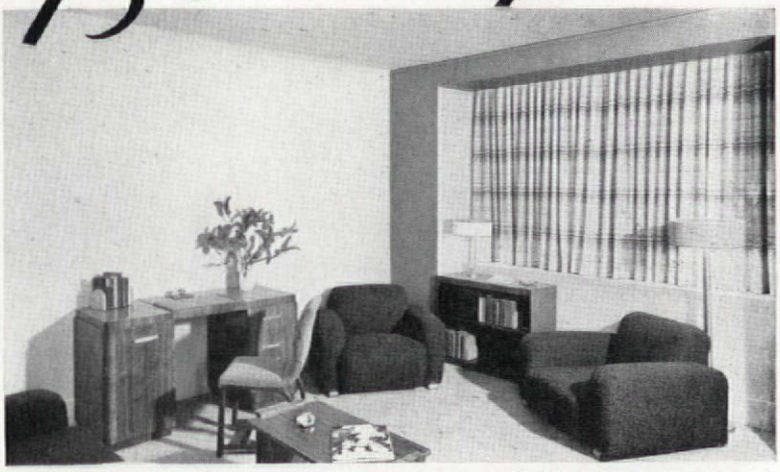
Editor, Howard Myers; *Managing Editor*, Ruth Goodhue; *Associates*, George Nelson, A. C. Shire, Cameron Mackenzie, Paul Grotz, Madelaine Kroll.

THE ARCHITECTURAL FORUM is published by Time Inc., Henry R. Luce, President; Robert L. Johnson, Roy E. Larsen, Vice Presidents; Charles L. Stillman, Treasurer; W. W. Commons, Secretary. Publication Office, 160 Maple Street, Jersey City, N. J. Executive, Editorial and Advertising Offices, 135 East 42nd Street, New York. Business Manager, Sheldon R. Luce. Advertising Manager, George P. Shutt. Circulation Manager, Robert W. Chasteney, Jr. Subscription Office, 350 East 22nd Street, Chicago, Illinois. Address all editorial correspondence to 135 East 42nd Street, New York. Yearly subscription, Payable in Advance, U. S. and Possessions, Canada, Cuba, Mexico, South America, $4.00. Elsewhere, $6.00. Single issues, including Reference Numbers, $1.00. All Copies Mailed Flat. Copyright, 1936, Time Inc.

VOLUME 65—NUMBER THREE

In line of Beauty

MASONITE

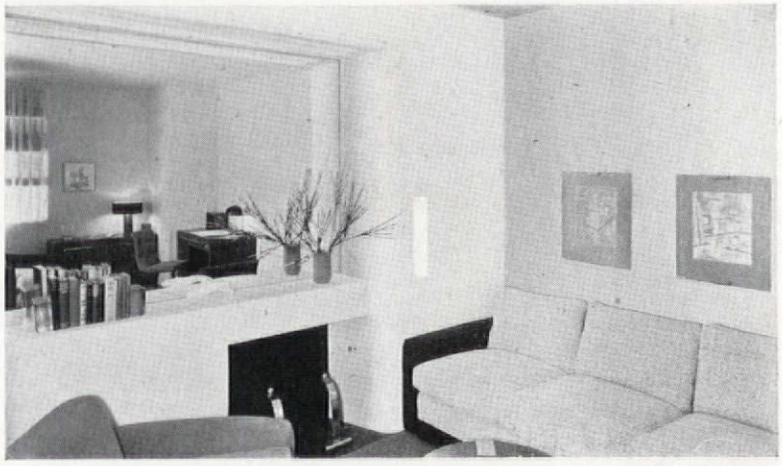


A living-room, designed by Robert Heller, and executed with walls and ceiling of MASONITE TEMPERED PRESDWOOD, done in cafe au lait. Bright red and blue are the predominating colors in the furnishings. The treatment of the long window achieves an interesting, modern effect, and demonstrates the versatility of MASONITE. Indirect lighting used in the window reveal.

• IN LINE of beauty—and duty—MASONITE never fails the architect, builder or home-owner. It affords a wide range of new and striking wall and ceiling treatments. It provides the means for executing many unusual effects. It produces expensive-looking results at low cost.

MASONITE requires less time to install than other materials. Yet it is as permanent as the building itself. Because it is dense and grainless, it is moisture-resisting. Properly applied, it will not warp out of shape.

This modern material can be purchased from leading lumber dealers everywhere. For full details and free samples, fill out and mail the coupon below. No obligation.



Robert Heller's studio living-room uses MASONITE TEMPERED PRESDWOOD walls and ceiling painted off-white. The carpet is light brown. The mantel design with overhead lighting panel is further proof of MASONITE'S ability to execute modern motifs. The light recessed into the side wall is also of special interest. The sofa is convertible into twin or double bed.

MASONITE CORPORATION, Dept. AF-9
111 W. Washington St., Chicago, Ill.
Please send me FREE sample and literature about —

- ☐ TEMPERED PRESDWOOD
- ☐ QUARTRBOARD
- ☐ STRUCTURAL INSULATION
- ☐ TEMPRTILE

Name_____
Address_____
City_____ State_____



The walls and ceiling of Mr. Heller's bedroom design are a blue-grey, to give a monotone effect. The material is MASONITE TEMPERED PRESDWOOD. Furniture is of rosewood with chrome pulls. White Venetian blinds are used at the window and the white accent again carried out in the lamp bases with their white fabric shades.

"It's Right" MASONITE **MASONITE**

THE WONDER WOOD OF A THOUSAND USES

THE ARCHITECTURAL FORUM

Published monthly by Time Inc., Henry R. Luce, President. Publication Office, 160 Maple Street, Jersey City, N. J. Yearly Subscription: U. S. A., Insular Possessions, Canada and Cuba, $4.00. Foreign Countries in the Postal Union, $6.00. Single issues, including Reference Numbers, $1.00. Entered as Second Class Matter at the Post Office at Jersey City, N. J., under the Act of March 3, 1879. Additional entry at New York, N. Y. Copyright, 1936, Time Inc. Spiral Binding U. S. Pat. Nos. 1516932 and 1942026. Other Patents Pending.

VOLUME 65
Number 3

THE MONTH IN BUILDING

VOLUME. Total increase for the country for the first seven months of 1936 compared with the same period last year was 81.8 per cent. F. W. Dodge figures on actual construction for July in 37 States east of the Rockies reached $294,833,000, highest monthly total since June, 1931, surpassing even last month's $233,054,000. Department of Labor permit figures likewise went up, from $155,635,000 for 1,500 cities in June to $156,328,000.

Dun & Bradstreet reporting increases in construction ranging up to 122 per cent over July, 1935, in the South Central district, with only the West Central States, in the Dust Bowl, showing a slight decline. Los Angeles still trailed New York City, led others (see page 244). Queens, L. I., led the nation in small house construction (see page 234).

Detroit, in the midst of a publicity program to up local building, follows Los Angeles, having gained 130.1 per cent over 1935. Houston, Dallas, and Fort Worth, Tex., all show large gains, from 212.1 per cent to 257.5 per cent, gains attributable to the fairs and to Texas' centennial celebration.

Department of Labor figures attribute $87,738,000 worth of permits to residential building, $38,043,000 to non-residential building, $30,547,000 to additions, alterations, and repairs.

The National Association of Real Estate Boards, in its regular semiannual report on the state of the nation's building and on the outlook of its real estate market, was more enthusiastic than it has dared to be for several years. Cautiously, the report spoke of prospects as "the most promising in many years." It pointed out that earning power was stiffening, that shortage of one-family dwellings has increased 10 per cent in six months to 76 per cent, that rents have advanced 10 per cent, that interest rates are falling, that new home building cannot keep ahead of demand, and that the subdivision market is 65 per cent more active than it was a year ago.

The FHA joined in the general acclaim of the market. It was learned last month that of 86,000 small house mortgages insured by the FHA, only a peewee four were in default, that these four were in each instance small. Also revealed by the FHA: the average home-owner is buying an inexpensive home. For the first half of 1936, the average insured mortgage was for $4,001, meaning that the average home is costing an approximate $5,000.

Unique volume reported last month was the assessed value of Oyster Bay, L. I., the total for next year having risen $1,000,000 to $125,322,990. This valuation, which in other years has brought Oyster Bay householders storming down to the town's Board of Assessors, is perhaps the world's largest for such a small community (104 sq. mi.), which includes as inhabitants Sportsman William R. Coe, Tin Plater William B. Leeds, Mrs. Theodore Roosevelt, Gambler Frank Jay Gould, Yachtsman Cecil Parker Stewart, Yachtsman George T. Bowdoin, Investment Counselors George Emlen Roosevelt and Philip James Roosevelt, Broker James N. de R. Whitehouse, Banker Acosta J. Nichols, former Assistant Secretary of War F. Trubee Davison, many another millionaire. This year's rise brought no protest.

COMPARISON. "It will be recognized that the progress of the corporation during the first half of the current year . . . has been outstanding. . . . Thinking perhaps it might contribute something in the way of a broader understanding on the part of the stockholders as to the current and possible future trends of the corporation's activities, which of course importantly reflect the course of industry in general, I submit a few observations." So last month wrote President Alfred P. Sloan, Jr. of General Motors in his bouncing semiannual report to stockholders (see page 189), which announced a six months' net of $140,000,000. President Sloan's thoughtful and provocative "observations," five in number, set many a thinking builder and realtor to drawing his own cheerful comparisons.

"First," wrote President Sloan, "there was a sharp depletion in the inventory of unused automotive miles. . . .Thus there is necessitated increased production to reach normal." In building, the best estimates place current housing supply about 900,000 units behind need.

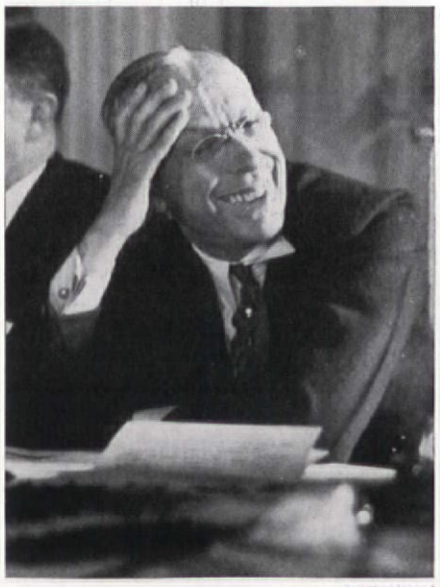
"Second, the opportunity of the motor car and the truck to serve the community, both from the social as well as from the economic standpoint, is continually broadening." Low cost housing, by the Government through the PWA, and by private enterprise through the FHA and limited dividend corporations has latterly become a commonplace.

"Third, technological progress was maintained . . . resulting in better all-around merchandise." In this field the building industry can recall its improvements in air conditioning, insulation, and prefabrication.

"Fourth, world recovery from the depression continues to make important progress."

"Fifth, purchasing power has been stimulated through Government expenditure."

To what a startling degree purchasing power was in fact being stimulated by Government expenditure was not last month generally realized. The better to bring it out, Economic Statistics, perhaps the most astute analysts of supply and demand in the country, last month published a chart which is reproduced in another context on page 231. Of the generous upward curve there displayed, President Sloan warned last month, "(The nation) cannot continue indefinitely to spend more than it collects."



General Motors' Sloan *International*

FHA. Last month for those who cared to look, the real estate sections of New York and Chicago papers held a sharp warning for the Federal Housing Administration. This warning was contained in nothing more ostentatious than the fact that a number of advertisements sponsored by the more responsible builders in the $5,000 to $10,000 class failed to carry the sign of FHA inspection and approval.

The reason for this omission lay not in the fact that the developers did not have FHA approval. They had it, but the plain fact was that they preferred to keep quiet about it. And the plainer fact was that in many places throughout the U.S. last month FHA approval was a mark of cheapness. It was cheap because some local FHA offices, over-anxious for new business, have lowered their standards to the point where any but the most shoddy builders can qualify—and having qualified, advertise.

Reluctant to believe that the FHA had begun to embroil itself in political complications, builders last month were badly in need of assurance that Administrator Stewart McDonald was not out to break records for the number of houses insured, but was still intent only on encouraging well-built, well-financed construction.

DROUGHT. Late reports indicate that the current drought is the worst this country has experienced since 1881. Immediate and liberal Government relief has been provided all over the Dust Bowl, but this is not expected greatly to change the fundamental economic effects of the situation.

Fairly well defined by historical analogy, these effects spring in general from the fact that a mid-summer drought causes a shortage of corn. Corn, in its turn, is the "feed" of livestock, and livestock represents the working capital of the Middle West farmer. To salvage what they can from the drought the farmers are ready to sell their livestock before it starves to death. This forced liquidation will net them an excess over normal cash-in-hand this Fall; but it will deprive them of regular income next year. Thus for twelve months at least a potent market for building will be in near-total eclipse.

MORTGAGE MONEY. By this time it has been generally recognized that the single, amortized mortgage of 80 per cent is here to stay—an event whose possibility five years ago would have been widely denied. In fact the basis of discussion has now shifted from the feasibility of the 20 per cent equity to the possibility of one at 10 per cent. To bolster the arguments of those who would like to see a 90 per cent mortgage, the example of England has been frequently adduced.

Great Britain has achieved a 90 per cent coverage for its cheaper, speculative-built houses solely by the expedient of adding a marginal "character loan" to a base coverage of 80 per cent (see p. 222). That the difference between the 80 and the 90 per cent coverage is in fact made on a character base is evinced by the fact that the difference is *jointly guaranteed* by the builder and the mortgagee. Were the loan made on the basis that a 90 per cent coverage was in fact adequate security, no guarantee would be necessary.

In the last analysis the 10 per cent character loan is dependent for its payment upon the character of the man who makes it, and more remotely upon his class consciousness and upon his chances of economic advancement. The Englishman is conscious of his "class" to a degree, and this fact diminishes not only the chance but the incentive for any meaningful economic change on his part. He makes a good risk because he "settles down" at birth. To discover the value of the 10 per cent character loan in the U.S., therefore, let the curious study not the English mortgage system but the American character.

CHALLENGE. Last month in Atlanta, Ga., the Government opened Techwood, its first completed venture in low rent housing. Average rental without heat, light or electricity is to be about $5.50 per room per month. This price has been achieved thanks only to a subsidy amounting to 45 per cent.

Last month in Memphis, Tenn., two real estate developers opened 24 three-room apartments whose rental, without heat, light or electricity, is to be $5 per room per month. This price is expected to return a legitimate profit to the builders without subsidy of any sort.

And by last month the function of the Government in housing had become so inextricably confused that the Memphis opening was headlined in the local press as "Private Capital's Answer to Government Challenge in Low Cost Housing."

The Government's objective in housing has been modified three times in order to have it conform with its accomplishments. When emergency was the essence, housing was a means of putting men and money to work. With social ideals in the ascendancy, it became the function of Government housing to give good shelter to those whom private enterprise could not afford to house. And when it became painfully obvious that the Government could never house but a fraction of those who needed it, the program became a "demonstration." That is what it is today. And as a demonstration, it has several duties to perform besides putting up cheap shelter.

Government housing today, for instance, must not hire its labor at sweat wages. It must use entirely adequate materials and equipment. It must reserve a decent 70 to 80 per cent of its land for recreation and open space. It must build its houses to outlast the investment period. It must place its projects in locations which are at once convenient to transportation and healthy for babies. It must provide community centers and recreation facilities convenient to a shopping district. These "musts" cost money. And without at least a majority of them, housing projects that are new today may in a handful of years be quite ready to qualify as slums.

New Deal housing is something less than realistic in the way it has piled gadgets and luxuries into its housing schemes; in the prices it has paid for urban land; in its avoidance of single house schemes. But the New Deal housing challenge is not to be dismissed by any home-a-day speculator who can run up a $5-a-month room.

RESEARCH. An empiric fact long known to city planners and realtors is that cities wander. Their shopping districts, their fashionable residential centers shift constantly, sending land and property values high and low in curves utterly unrelated to capital values. Last month the Census Bureau began a study in Philadelphia to find out the causes behind these migrations, and with this knowledge perhaps help realty to forestall or at least to control realty treks.

This study will begin with a survey of the amount of business being done in the center of Philadelphia as against the amount being done in its suburbs. Presumption is that a great flux to the outskirts will be revealed, evidence which is calculated to scare the downtown urban realty holder into some form of constructive action to keep business "in town." Obviously called for by such a situation—and it seems fairly obvious that it does in fact exist—is a downward revision in midtown prices, together with some basic reforms in the methods of handling traffic, a factor rarely recognized in realty reform schemes.

EARNINGS. Reports for the first six months of 1936 continued the prosperous refrain of the quarterly figures. Particularly noticeable was the improved position of Steel, Jones & Laughlin setting the pace with an 800 per cent increase in its semi-annual figures. Otis Elevator's sharp rise gave promise of a return in large building, reflected the upturn in urban, commercial construction. Herewith, for the first six months of the year, some outstanding firms and figures:

	1936	1935
Allis-Chalmers Mfg. Co.	2,088,600	554,955
American Laundry Machinery Co.	210,363	149,117 D
American Rolling Mill Co.	2,305,065	2,459,003
Bridgeport Brass Co.	384,354	384,160
Briggs Mfg. Co.	6,874,102	6,545,458
Brunswick-Balke-Collender Co.	118,155 D	159,070 D
Congoleum-Nairn Co.	1,036,814	1,356,088
Detroit Steel Products Co.	356,255	93,477
Easy Washing Machine Corp.	334,756	117,010
Electrolux Corp.	1,558,758	1,392,110
Formica Insulation Co.	103,946	62,797
Hobart Mfg. Co.	423,601	328,866
Jones & Laughlin Steel Co.	182,454	750,377 D
Kalamazoo Stove Co.	237,830	114,813
National Lead Co.	2,740,927	2,615,510
National Steel Corp.	5,182,715	6,315,995
Otis Elevator Co.	934,819	114,690
Republic Steel Corp.	3,022,094	2,756,564
Revere Copper & Brass Inc.	733,430	513,598
Ruberoid Co.	209,825	264,483
Walworth Co.	* 80,537	219,550 D
Worthington Pump & Machinery Corp.	162,529	247,023 D
Yale & Towne Mfg. Co.	409,135	61,838

D Net loss. * Profit before Federal income taxes.



Courtesy New York Historical Society

Boston's

Better Buildings are Barrett-roofed



Fairchild Aerial Surveys, Inc.

In Boston, metropolis of New England, as in every other large city, the preference that leading architects and engineers accord to Barrett Roofs is based upon their appreciation of the unmatched service these famous roofs offer.

Barrett Specification Roofs are constructed of the finest quality pitch and felt it is possible to produce. They are applied by Barrett Approved Roofers according to time-tested and time-approved Barrett Specifications.

Bonded by the United States Fidelity and Guaranty Company against maintenance and repair expense for 20 years, the term of the bond only *begins* to measure the actual life of the roof.

On any building or remodeling project, consult your architect. On any roofing, reroofing or waterproofing project, consult your local Barrett Approved Roofer, or write us.

Boston can boast of many Barrett-roofed buildings. Prominent among them are:

Boston Chamber of Commerce Building
United Shoe Machinery Building
Tower Building
Central Post Office Building
Federal Reserve Bank
Gillette Safety Razor Company
Edison Electric Illuminating Company
Boston Herald-Traveler Building
Hotel Bradford
Metropolitan Theatre
New England Tel. & Tel. Co.
Salada Tea Company
Park Square Building
University Club
Christian Science Monitor Publishing Company

. . . and many others, including India Wharf, whose Barrett Roof has been giving continuously satisfactory service for 55 years.

THE BARRETT COMPANY, 40 RECTOR STREET, NEW YORK, N. Y.

2800 So. Sacramento Avenue, Chicago, Illinois — Birmingham, Alabama

7 YEARS OF CONSTANT SERVICE
7 YEARS OF PERSONAL PROOF

IN SHACHNOW & BROWN PROPERTIES

ELECTROLUX

assures permanent silence . . . low maintenance cost



1929—*One of the first of the buildings equipped with Electrolux at 666 East 233rd St., Bronx, by Shachnow & Brown. These refrigerators are still on the job today!*



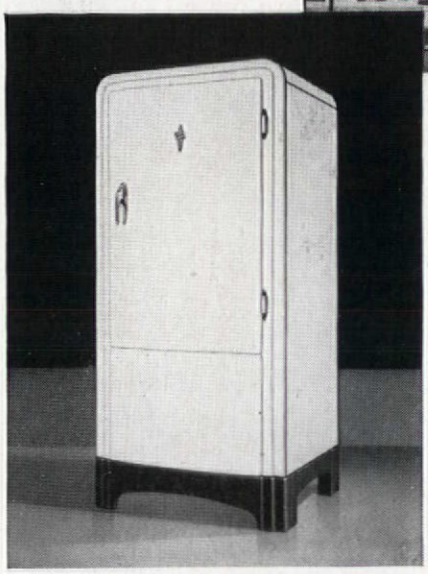
1935—*Latest of the Shachnow & Brown properties in which Electrolux has been installed. This building is at 635 East 211th Street, Bronx.*

Well-known New York builders choose Air-Cooled Electrolux for latest building because of continued satisfaction with gas refrigerators installed in 1929!

MORE than 7 years ago, the first Electrolux refrigerators went into the properties of Shachnow & Brown, Builders and General Contractors, of 527 Fifth Avenue, New York City. And this firm has continued to install this modern gas refrigerator ever since! Writes Mr. M. Shachnow, President, in a letter to Consolidated Edison Co., of New York:

1,000 Electrolux Installed

"Since 1929, we have been installing Electrolux in our properties. The latest of our buildings to be equipped with this refrigerator was opened just last fall at 635 East 211th Street, Bronx, N. Y. And it is a real pleasure to tell you that our Electrolux Refrigerators, including those installed some 7 years ago in our 137 apartments in premises 666 East 233rd Street and 667 East 232nd St., Bronx, have *continually* afforded completely efficient performance and unusually low maintenance. We also wish to thank your company for its courtesy and dependable servicing of our one thousand (1000) gas refrigerators.



Valuable Rental Appeals

"I recall that when we first purchased Electrolux we did so because we agreed (1) that a refrigerator without moving parts to wear promised bigger benefits in the way of long life and economical upkeep; (2) that the low operating cost and silence of Electrolux would appeal strongly to tenants. *Experience has proved that we were right on both counts.* Naturally, therefore, we do not hesitate to recommend Electrolux heartily to any builder or owner."

It will pay *you* to investigate Electrolux carefully before choosing any new refrigerators for your properties. See the beautiful models on display at your gas company. Servel, Inc., Electrolux Refrigerator Sales Division, Evansville, Indiana.

SERVEL ELECTROLUX

THE *Gas* REFRIGERATOR



OF COURSE YOU'RE BUILDING UP-TO-DATE HOMES

and there's nothing like gas for keeping them Modern!



Illustration from an advertisement in the "Modernize Your Home With Gas" campaign in national magazines of 14,000,000 circulation.

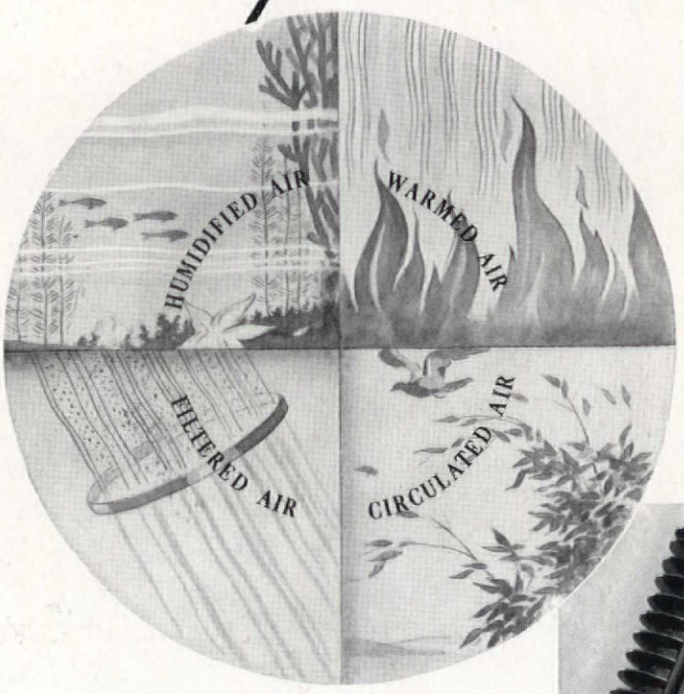
WHETHER the homes you build represent the last word in functional planning or take their lines from more conventional designs, modern gas equipment will make them *stay* up-to-date as long as they're lived in!

For the reputation of gas as the ideal fuel goes back literally for generations and has earned it an established place in more than 15,000,000 homes. Continuous development of appliances has made its use truly modern in terms of convenience. Up-to-date gas ranges with automatic lighting, dependable oven heat control and effective insulation take much of the worry and bother out of cooking. Gas refrigeration offers the last word in silent, simplified operation in addition to its proved economy. And modern automatic gas water-heating and house-heating equipment makes gas the perfect answer to every domestic need for heat. In addition to its firmly established reputation for efficiency and dependability, gas now offers worthwhile economies in homes completely equipped to use this ideal fuel.

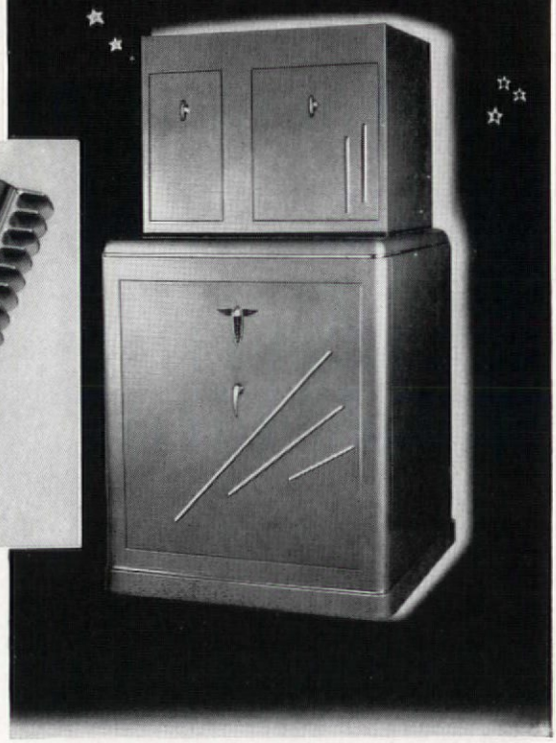
Your local gas company will gladly cooperate with you in the selection and installation of modern gas appliances. Make up-to-date gas equipment a standard item in your specifications—then you'll know the homes you build will *stay* modern!

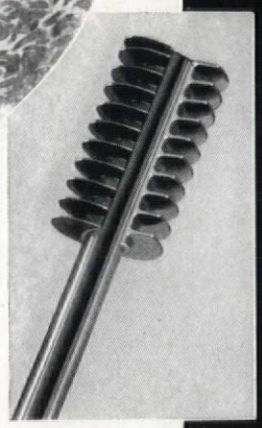
AMERICAN GAS ASSOCIATION

Only GAS ★★★★ CAN GIVE YOU



Fully Automatic HEAT TOGETHER WITH HEALTHFUL REVITALIZED AIR





Detailed description of this copper-fin-and-rod heat exchanger — an exclusive Janitrol feature — will be mailed on request. Write for it.

GAS is the only fuel that is absolutely clean, completely automatic, and readily adaptable to positive, accurate control.

This new Janitrol Gas-Fired Winter Air Conditioner matches this perfect fuel with a highly perfected heater, combining these important features: compactness, attractive styling, finished in opalescent azure blue enamel, with chrome handles and louvres, high heat output, improved humidification and more accurate temperature control.

Measuring only three feet square and six feet high, including the bonnet, in the 90,000 B. T. U. hourly size, this new unit provides high heat output in materially reduced space, through the use of a new copper-fin-and-rod heat exchanger. Additional heat output requires a cabinet of no greater width or height . . . and only slightly increased depth.

Ask for detailed specifications on this and other Janitrol gas-burning house-heating equipment, including conversion gas burners and gravity heaters.

✱ RESEARCH AND DEVELOPMENT

Janitrol Gas-Burning equipment is made by the largest exclusive manufacturer of such equipment in the world. For years, they have specialized in all types of gas-burning units, including many of the largest industrial installations. Janitrol leadership is based upon extensive engineering research. 10% of the Janitrol organization being engaged in research and development work.

SURFACE COMBUSTION COMPANY
Engineering Service in all Principal Cities
TOLEDO, OHIO

JANITROL GAS-FIRED *Winter* AIR CONDITIONER

FORUM OF EVENTS



Wood

FORT WORTH FESTIVAL

To far away Salzburg hundreds of Americans ship each year for its famous Opera Festival. Nearer home, in fact no further than Fort Worth, Texas, is now to be seen not opera but America's first Theater Festival.

Local pride led Dallas to put on a fair as a feature of this year's Texas Centennial and local pride demanded that Fort Worth match, ape or beat Dallas with its own show, depending on where you come from. Fact is that Dallas went long on education, Fort Worth on entertainment. Here is a circus, a rodeo, a musical comedy, a frontier saloon show and for good measure or bad, a Sally Rand nude ranch. Missing only is the drama, an omission due to lack of funds to complete the proposed theater building.

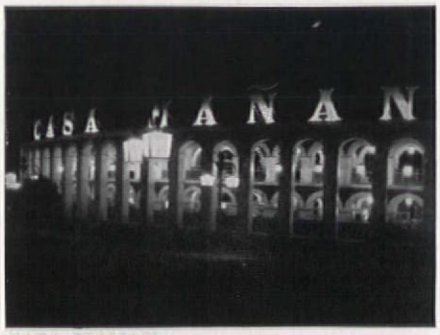
The Fort Worth Festival is good theater, undoubtedly because the men who did it are good seasoned showmen, the fabulous Billy "wow-puncher" Rose and his hardly less fabulous collaborator in the New York Jumbo spectacle, Albert Johnson. While Rose whipped dance routines and cowboy comedians into Broadway perfection, Johnson with the aid of Joseph R. Pelich, local architect, pulled out of the apparently inexhaustible trick bag he has worked so long for Rockefeller Center's Music Hall, several dozen new ideas for sets, for costumes, and for buildings in which to display them. And with the other hand he devised a simple but effective plan which led traffic along short avenues with a major interesting building at the end of each vista. As will be noted on the air view, traffic flows along a W-shaped route, cannot be side tracked and never too long in one direction to tire the crowd.

The feature buildings after one enters the Frontier Town street are first the circus where the Jumbo show appears, then the Casa Mañana, next the Frontier Cafe and finally the Rodeo. Smaller concessions flank the approaches to these buildings.

The Jumbo building, clearly the most original and interesting in design, is derived from the traditional circus tent form but exposes on its exterior a two-story open colonnade richly detailed in the New Orleans French manner. The contrast of the heavy ornate grilles painted dead white against the bright red of the stark building is preparation for the dramatic interior which repeats at larger scale the exterior motif. Here, one huge ring replaces the conventional three. The audience is seated in sharply terraced sections much like the New York Hippodrome, also by Mr. Johnson, from which the color scheme of vivid blue, red and white was appropriated.

Casa Mañana is also approached through a two-story colonnade and is of course

(Continued on page 39)



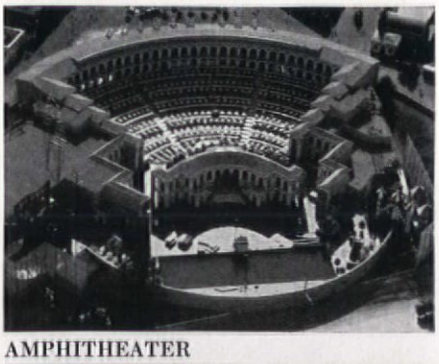
CASA MANANA



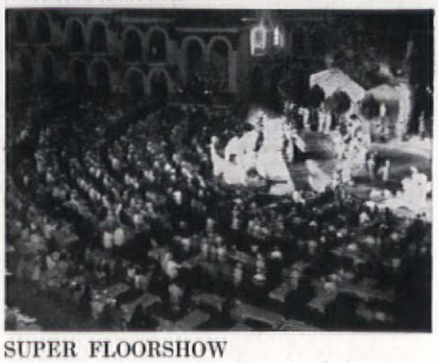
JUMBO



FRONTIER PALACE



AMPHITHEATER



SUPER FLOORSHOW

FOR HEATING LINES

Copper Tubes are "the Last Word"



An Anaconda Fitting for every purpose

There is an Anaconda Solder Fitting, wrought copper or cast bronze, for *every* copper tube requirement in plumbing and heating.

1-*Low Cost* . . Anaconda Copper Tubes, assembled with solder-type fittings, cost (installed) little, if any, more than rustable pipe.

2-*Durable* . . Tubes of rust-proof copper give reliable, trouble-free service *indefinitely.*

3-*Faster Flow* Permanently smooth inside surfaces reduce resistance to flow—especially in forced circulation systems.

4-*Reduced Heat Losses*

Hot water conveyed through copper tube loses only about *one-half* as much heat as is lost when black iron is used.

5-*Greater All-round Efficiency*

The maximum amount of heat delivered to radiators in the least possible time.

Anaconda Copper Tubes—a definitely superior product for heating lines, at little or no extra cost!

THE AMERICAN BRASS COMPANY

ANACONDA from mine to consumer 3651A

General Offices: Waterbury, Conn.

Offices and Agencies in Principal Cities

ANACONDA COPPER & BRASS

Cost Reduction *in* Air Conditioning *by* Odor Control!

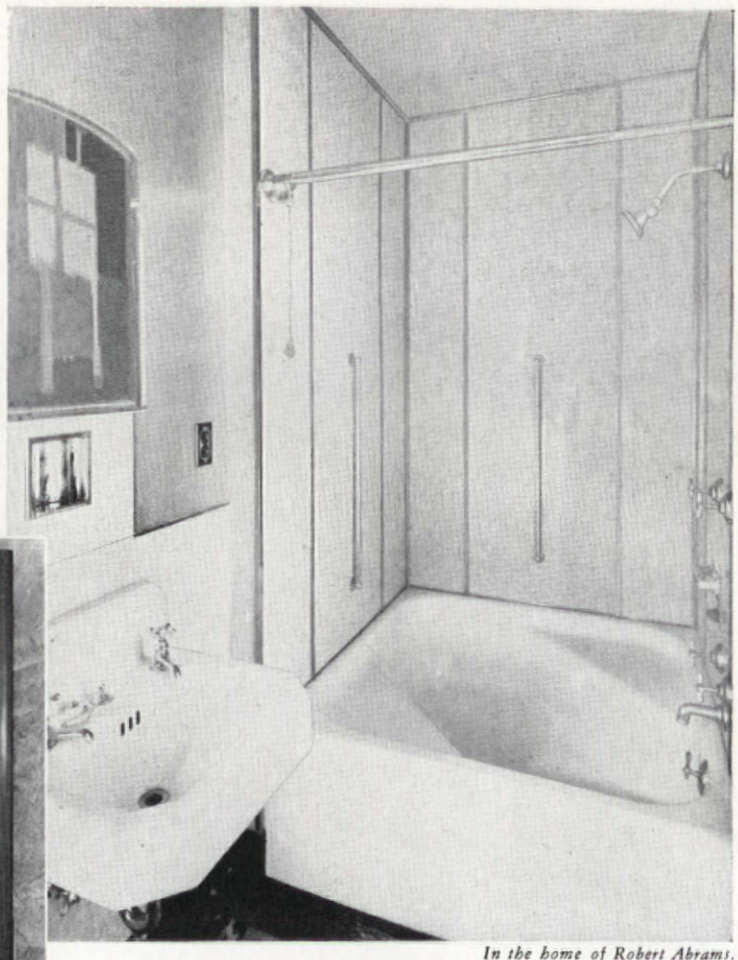
ELECTRIC CURRENT is a big factor in the cost of air conditioning systems. As indoor air becomes stale it is necessary to discharge and replace it at regular intervals with make-up or outside air. Hence, operating costs are due largely to cooling of considerable quantities of this outside air. ¶By completely freeing the air of odors in passage, the CONSOLIDATED ODOR ADSORBER permits the re-circulation of a maximum of the previously conditioned air and lessens considerably the amount of make-up air required. Briefly, it allows full advantage to be taken of the re-circulation principle. ¶The CONSOLIDATED ODOR ADSORBER offers the most thorough, practical and economic method of odor elimination in any type of application — from homes to large industrial plants. The adsorbent agent is activated coconut shell carbon — developed from the gas mask to its present efficacy — and is available in standard equipment. ¶The use of the odor adsorber has made possible the air conditioning of places that formerly defied purification, and it has been particularly successful in industry where obnoxious gases were a problem or where an odor-free atmosphere was required. ¶CONSOLIDATED ODOR ADSORBER equipment can be built into existing systems of any type or installed as an independent unit. ¶Tables illustrating in detail savings obtained through the use of CONSOLIDATED ODOR ADSORBERS are contained in our brochure "Odor Adsorption in Air Conditioning." We shall be pleased to forward a copy or we will submit recommendations and estimates upon request. Address:

CONSOLIDATED AIR CONDITIONING CORPORATION

112 East 32nd Street, New York, N. Y.

ONLY A CONSOLIDATED ADSORBER ***REMOVES*** ODOR

MODERN WAINSCOT AND DOORS OF FORMICA



In the home of Robert Abrams, University City, Missouri. Architect, Leo Abrams. Installed by Sol. Abrahams & Son Construction Company, St. Louis.



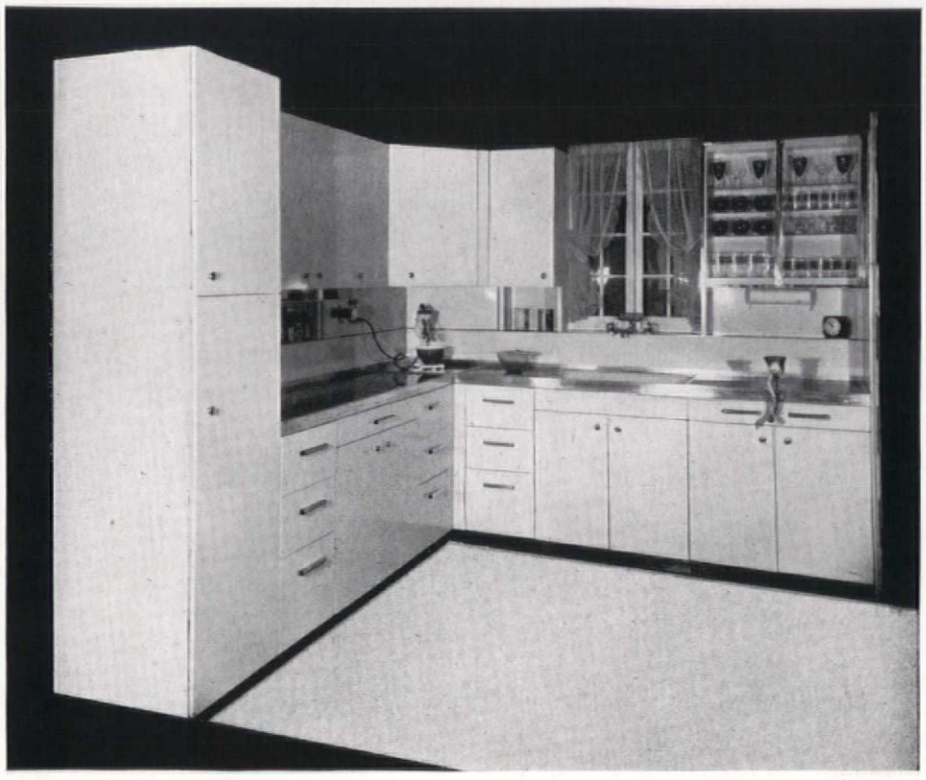
THESE two effective uses of Formica are increasingly popular with architects. The material is permanent in color and finish and very easy to keep clean. It resists the things that break down and destroy most surfaces making refinishing and maintenance necessary.

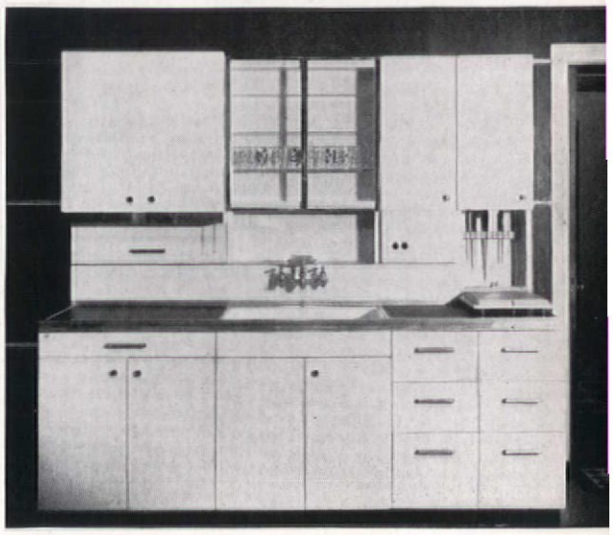
There is a very wide range of colors, patterns, and possible inlays worked out in metal or contrasting colors. Novel and thoroughly modern effects are possible. We shall be glad to send more detailed information on request.

FORMICA

THE FORMICA INSULATION COMPANY
4620 Spring Grove Ave., Cincinnati, Ohio

FOR BUILDING PURPOSES





Possible combinations for two different kitchens. The glass doors show up the attractive glassware behind them. The large "L" shaped arrangement will retail for about $500. The smaller straight line for about $275.

ENTER . . . THE INTEGRATED KITCHEN

The scientific approach in kitchen and bath planning and equipment, which unfortunately is not vastly evident yet in other parts of the house, now records further advances in the new Arcode kitchen units of the Accessories Co., a division of the American Radiator Co., 40 West 40th St., New York, N. Y. The bath units are already well known. The introduction of the kitchen units round out a system of sectional bathrooms and kitchens in which these rooms are treated as functional machines and not as a haphazard assembly of fixtures.

The kitchen sections are designed not merely as equipment to be added to the kitchen, but to become an integral part of the building. The units can act as partitions as well as cabinets, can carry not only their own load but that of the floor and ceiling above them. Pipe enclosures, even heating or ventilating ducts with radiators, fans, and louvers are standard parts of these service units.

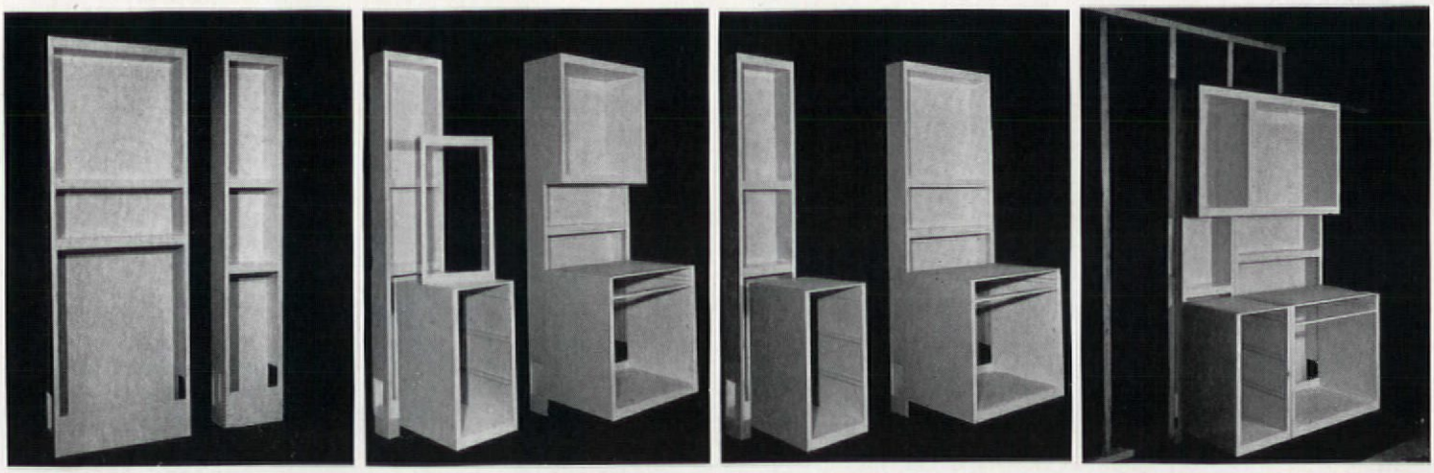
The advantages besides the obvious ones of economy of space and building material, are that these sections become the armature for the rigid mounting of fixtures and cabinets, preventing the usual distortion that causes sticking doors and drawers.

This system was conceived by George Sakier, designer and engineer, who has been working closely for a number of years here and in Europe with building technique research and who, through actual experience, is thoroughly conversant with the economics of quantity production and merchandising. With a comparatively few simple standardized parts suitable to mass production a multiplicity of sizes and arrangements and a wide flexibility of use can be attained. They are suitable for remodeling as well as for new houses.

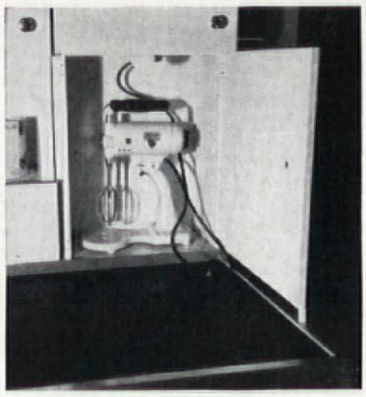
The basic units are the wall section, the base cabinet, and the hanging cabinet.



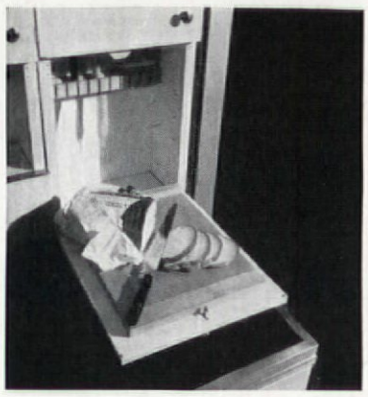
Worthy of note in this section are the metal cup racks utilizing the full depth of the cabinet. Note the punching of the side members to hold shelves at almost any place they are wanted.



Showing how other basic units are built out from and fastened to the wall sections. Note the openings near the bottom of the wall section for pipes and electric wiring.



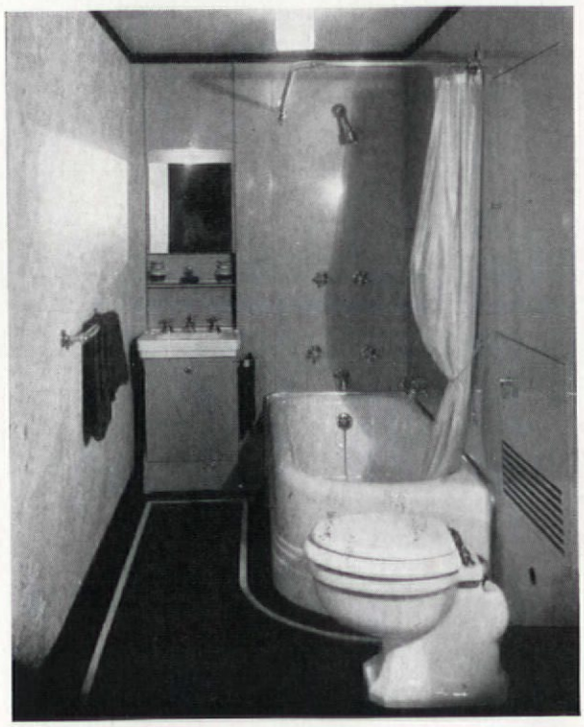
Cabinet for electric mixer at work-top level so that this heavy piece of equipment need not be lifted about.



A drop-down door with a bread board on its back. Note the knife rack and sharpener.



The "spice shelf" and the dashboard to the right. The metal band above the spice shelf conceals a folding door for this space and lights.



Each fixture with the wall behind it forms a unit. The water closet tank is in the wall behind the toilet. Below is a radiator; the louvers deflect the heated air to body level. Medicine cabinet, light above, shelf below, and part of the lavatory are all in the wall. The cabinet below the lavatory is a laundry hamper which hides the trap and utilizes otherwise wasted space.

For flexibility in design with simplicity in parts, a module system is employed. Wall sections are all steel channels 7 ft. high and 6½ in. deep. Spacing is always a multiple of 7½ in. to fit the three cabinet widths or 15 in., 22½ in., and 30 in. Base cabinets are all 30 in. high and 21 in. deep, set on a base 4 in. high; hanging cabinets, also 30 in. high, are 7¼ in. or 13¾ in. deep, or two units together form a cabinet 20¼ in. deep. Full height cabinets are 7¼ in. or 21 in. deep.

With these standard sizes, some filler plates, a corner unit, adjustable shelves, and interchangeable doors and drawers, the architect or kitchen planner can produce almost any desired result. He can provide his client with a really efficient kitchen. He can even design a kitchen that opens through into a pantry or even into a dining room. The rear side of the wall sections need only to be suitably finished to form the wall of the adjacent room. If this is a dinette, for example, a coat of paint or wallpaper can be applied directly to the steel.

The material, of course, is enameled pressed steel of gauges from 24 to 14; non-oxidizing aluminum alloy is used for nozings and trim, worktops can be Formica or tinted and polished Masonite "Presdwood." Kitchen sinks are acid-resisting vitreous enamel on cast iron. Doors, usually of enameled steel, may be glass in chromium plated frames. The cabinets and steel doors are double walled and insulated throughout.

If the architect wishes to complete the balance of the room in steel to match the wall sections, full length and wainscot height panels are available in 16 in. widths. Modern design economy often demands that the bathroom be adjacent

(Continued on page 52)

Step into the AMBASSADOR *and see how* smart floors attract smart trade





A striking example of the design possibilities of Armstrong's Linoleum is this floor in the dining-room of the Ambassador Hotel, Washington, D. C. Circle is White No. 23 with border of Ruby No. 40. Squares are Cadet Blue No. 29 with interliners of White and outer border of Ruby.

RIGHT underfoot is your big opportunity to dress up for better business. That's the sales tip of this smart dining-room in the Ambassador Hotel, Washington, D. C.

Here an Armstrong's Linoleum Floor creates an inviting atmosphere for people who are real spenders. But linoleum does more than decorate. It's ideal for dancing—comfortable, quiet, and resilient. It has that clean look so necessary where food is served. Yet cleaning costs are cut to the bone, because simple sweeping, waxing, and occasional washing keep its rich colorings beautiful for years.

Besides linoleum, Armstrong also offers the only complete line of resilient tiles—Linotile, Accotile, Cork Tile, and Rubber Tile, from which you may select the exact floor to meet your specific floor needs.

These tile floors may now be purchased with time payments through the Armstrong Finance Plan. For complete information and for a color-illustrated copy of "Better Floors for Better Business," write immediately to Armstrong Cork Products Company, Building Materials Division, 1203 State Street, Lancaster, Pennsylvania.

ARMSTRONG'S *Linoleum* *and* RESILIENT TILE FLOORS

LINOTILE · ACCOTILE · CORK TILE · RUBBER TILE · LINOWALL · ACOUSTICAL CEILINGS

Telechron TIME
IN THE "CITY WITHIN A CITY"



Courtesy of New York Times Studios—New York Times Magazine

Radio City Associated Architects . . Reinhard and Hofmeister and A. J. Fouilhous
Electrical Engineer on all Radio City Buildings . . . . . Clyde R. Place
Electrical Contractor on RCA Building . Edwards Electrical Construction Company
Electrical Contractor on International Building . . . J. Livingston & Company

● ONE OF THE greatest architectural developments in the world is half completed. Even now, Rockefeller City dominates the skyline of New York City — a massive monument to architectural and engineering skill.

The vision of the builders of this great project is "to combine beauty, utility, dignity and service." Provisions for built-in Telechron electric clock systems were made both by the directing engineers of the project, and by tenants in the various buildings. For instance, the RCA Theater Building has a Telechron system of 60 clocks with central control, while the British Empire Building has four special bronze dial clocks, controlled from the International Building.

These silent, self-starting clocks with sealed-in-oil motors may be installed as individual timekeepers, or as part of a centrally controlled system of thousands — all operating direct from the regulated alternating current service.

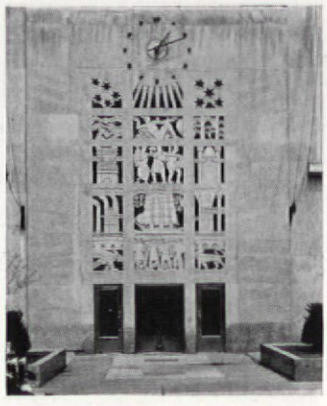
Because of low initial, operating and maintenance costs, architects are suggesting Telechron timekeeping equipment for new or modernized projects.

Our representative will be glad to call on you and discuss your timekeeping problems. Address the Warren Telechron Company, 796 Main Street, Ashland, Massachusetts.



This 20-inch built-in Telechron clock in the main RCA Building (No. 30 Rockefeller Plaza) consists of cast-bronze hands, numerals set into wall surface, and movement.

●



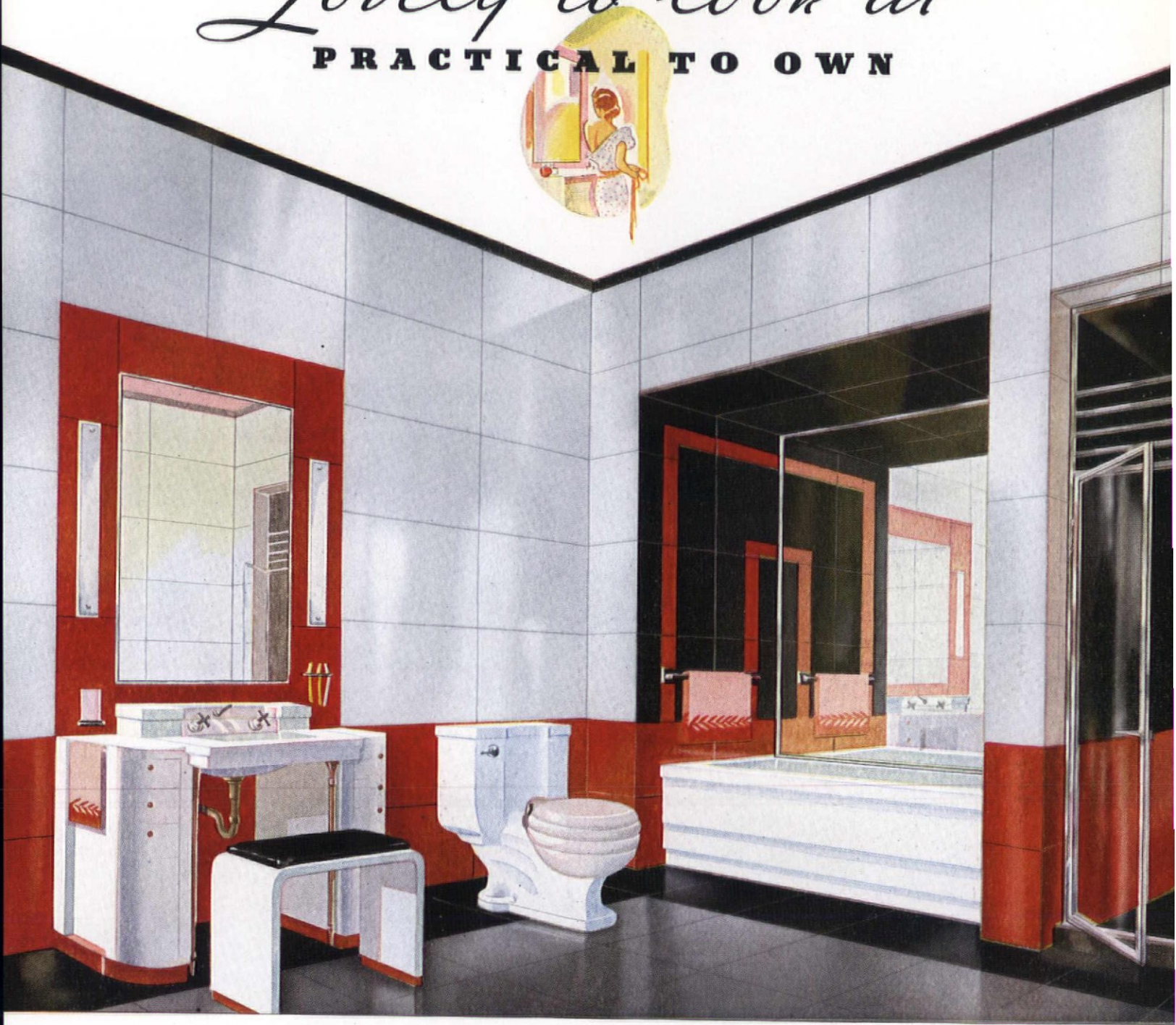
This five-foot-diameter built-in Telechron outdoor clock over the entrance from the Plaza to the International Building consists of stainless-steel hands, markers set into building, face, and heavy-duty movement.

TELECHRON

SELF-STARTING SYNCHRONOUS ELECTRIC CLOCKS

Lovely to look at

PRACTICAL TO OWN



IN A NEW HOME—or in an old one—the use of Vitrolite, the colorful structural glass for bathrooms, achieves almost unbelievable loveliness and practical utility.

Vitrolite's 16 colors and hues, plus the surface effects obtainable through sandblast, afford opportunity and inspiration for working out bathrooms and kitchens of originality and charm. Used with chromium and stainless steel, Vitrolite is stunning.

Vitrolite's practical values are just as outstanding. A damp cloth is all that is ever required to keep its lustrous beauty and enduring qualities of sanitation unimpaired. Vitrolite is installed easily—quickly—in new buildings or in modernizing; it is applied directly over any secure wall. It lasts a lifetime.

Vitrolite is installed only by authorized representatives in each locality, thus assuring satisfactory workmanship. The Vitrolite representative will be pleased to serve you with reference to construction details and cost on any installation. The Vitrolite Art Department will prepare color sketches for the architect suggesting Vitrolite arrangements and color schemes, without obligation.

For windows, specify L-O-F quality glass. For interiors, mirrors of L-O-F polished plate glass, clear or in colors, offer unlimited decorative architectural possibilities.

Vitrolite Division • **LIBBEY • OWENS • FORD GLASS COMPANY**

VITROLITE

Colorful structural glass

L O F

Vitrolite Division, Libbey • Owens • Ford Glass Company
208 W. Washington Street, Chicago H-9

VITROLITE

Please send New Vitrolite Color Chart of 16 colors—10 solid hues, 6 agate shades, and variety of surface effects—and your new literature for ☐ Bathrooms and Kitchens, ☐ Store Fronts, ☐ Construction Details.

Name.....

Address.....

City..... State.....



Morrison Hotel, Chicago, Ill.
Architects — Holabird & Roche, Chicago
Roofing Contractors — Advance Roofing & Sheet Metal Works, Chicago
Genasco Standard Trinidad Built-up Roofing still in good condition after 21 years.



Palmer House, Chicago, Ill.
Architects — Holabird & Roche, Chicago
Roofing Contractors — Advance Roofing & Sheet Metal Works, Chicago
Genasco Standard Trinidad Built-up Roofing applied in 1924—not a penny spent in repairs according to records of June 1936.



Sherman Hotel, Chicago, Ill.
Architects — Holabird & Roche, Chicago
Roofing Contractors — Advance Roofing & Sheet Metal Works, Chicago
Genasco Standard Trinidad Built-up Roofing applied in 1926—still in good condition.



Stevens Hotel, Chicago, Ill.
Protected since its erection in 1927 with Genasco Standard Trinidad Built-up Roofing.
Architects—Holabird & Roche, Chicago
Roofing Contractors—Advance Roofing & Sheet Metal Works, Chicago

These 4 famous Chicago Hotels are roofed with Genasco

Reg. U. S. Pat. Off.

These four Chicago hotels are among the largest and most famous in the world. Millions of dollars were spent in their construction.

For the finest, most durable roof, a Genasco Standard Trinidad Built-up Roof was specified, the roof that is used on so many commercial, industrial, institutional and public buildings throughout these United States.

Genasco Standard Trinidad Built-up Roofing is made with alternate layers of Genasco All-Rag Felts and genuine **Trinidad Native Lake Roofing Asphalt.** It has quality in appearance, quality in endurance, for it lasts for years and years with slight, if any, need for repairs.

Send the coupon NOW for full information.

THE BARBER ASPHALT COMPANY
PHILADELPHIA
NEW YORK CHICAGO ST. LOUIS

Genasco
Reg. U. S. Pat. Off.
STANDARD TRINIDAD
Built-up Roofing

AF9

THE BARBER ASPHALT COMPANY
1600 Arch Street, Philadelphia, Pa.

Please send me the following:

1. . . . . Copy of your book "For Your Roof" illustrating prominent buildings protected with Genasco Standard Trinidad Built-up Roofing.

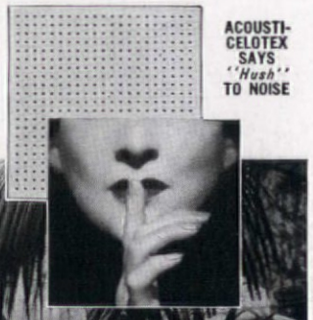
2. . . . . Don Graf Data Sheets outlining properties of Trinidad Lake Roofing Asphalt—also giving data on asphalt mastic flooring.

Name .....

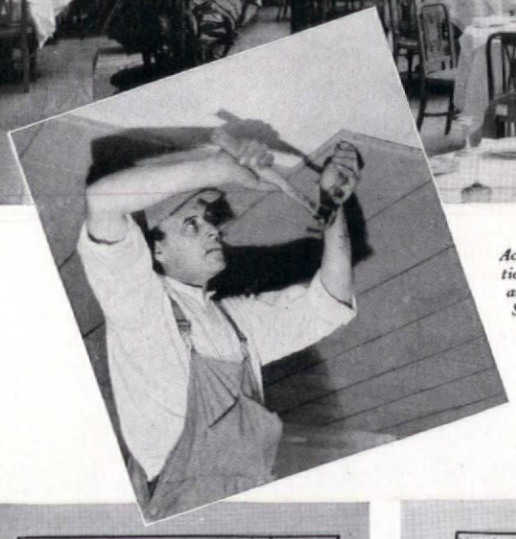
Address .....

SUBDUE NOISE PERMANENTLY WITH ACOUSTI-CELOTEX

An Ideal Acoustical Corrective for the Rooms You Create.
Adaptable . . . Easily Applied . . . Paintable. . .
And Permanently Effective



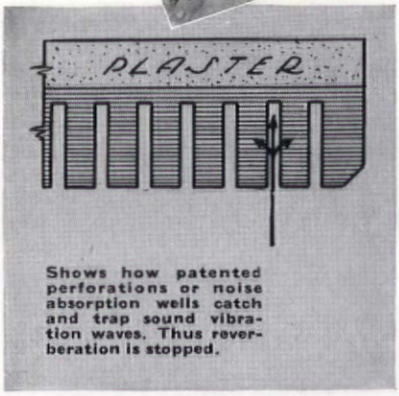




Acousti-Celotex aids in adding distinction to almost any room, using almost any variation of interior treatment. Shown above is the Garden Room, Victor Hugo Cafe, Beverly Hills, Calif. — Acousti-Celotex cemented to concrete walls.

•

Acousti-Celotex is easily and quickly applied over old ceilings, as well as in new construction.



Shows how patented perforations or noise absorption wells catch and trap sound vibration waves. Thus reverberation is stopped.



Painting Acousti-Celotex to increase light reflection values does not close entrance of sound absorption wells.

PAINTABLE **ACOUSTI-CELOTEX** PERMANENT

TRADE MARK REGISTERED U. S. PATENT OFFICE

ACOUSTI-CELOTEX not only adds comfort and quiet to the rooms you create for your clients, but gives you unusual latitude in the creation of attractive interiors. You'll be delighted at the distinctive adaptability of this efficient noise-deadening material. And equally delighted at the satisfaction it will give your clients.

Let us send you complete information and samples of Acousti-Celotex. Use the coupon or your letterhead.

THE CELOTEX CORPORATION

Sales Distributors in Principal Cities Throughout the World

Celotex Cane Fibre Products are manufactured under the Ferox Process (patented) and resist damage by Fungus Growth, Dry Rot and Termites (white ants). Look for the brand name. Accept no substitutes.

Celotex Corporation AF 9-36
919 N. Michigan Avenue, Chicago, Illinois

Without obligation to me, please send complete facts on Acousti-Celotex, including information on the various treatments in which it can be used.

Name .....

Address .....

City and State .....

ADDS AN EXTRA ROOM

WITHOUT HIGH-PRICED HEATING

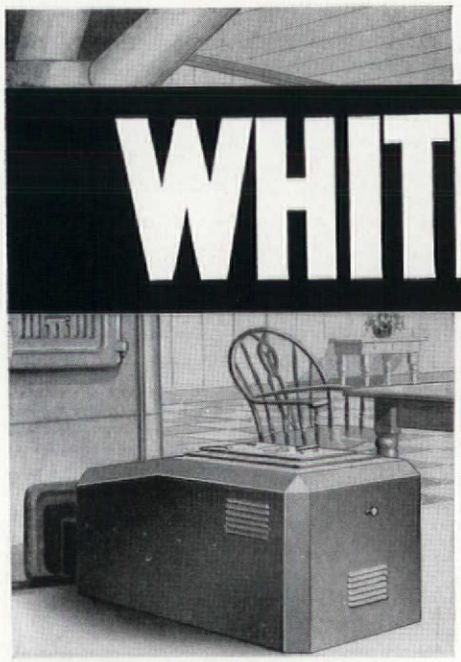
WHITING
CORPORATION
HARVEY · ILLINOIS

A game room for grown-ups . . . or a playroom for children. The cellar can become a most attractive part of the home if you specify *Whiting Automatic Heating.*

The smaller the home, the more an extra room is needed — and the more the economy of a Whiting Stoker will be appreciated.

Why plan heating systems which require the use of high-priced fuels? A Whiting Stoker costs even less to operate, in most cases, than the hand-fired furnace. But equally important — Whiting is proving to be the most satisfactory type of *Automatic* heating. Room temperatures cannot fluctuate so widely. The response to thermostatic demands are more prompt and accurate. All because of the new *Whiting 5-Way Control.*

Add an extra room to the homes you design. Specify *Whiting Stokers* — and you'll also give the home-owner the most economical, most satisfactory heating system. Complete information upon request.



WHITING STOKER

GREATER HEATING LUXURY
AT A LOWER COST

AUTOMATIC COAL BURNERS
FOR ANY FURNACE OR BOILER

WHITING CORPORATION
15630 SOUTH HALSTED STREET, HARVEY (A Chicago Suburb), ILLINOIS

HOW *Smooth* IS TURQUOISE?



These two-piece metal masks telescope over the pencils, hiding all identifying characteristics and exposing only the sharpened ends for your test.

MAKE THE MASKED PENCIL TEST

TWO METAL MASKS AND TURQUOISE *PENCIL* FREE

BY exact laboratory tests, we have verified the precision grading, measured the extra point strength and photographed the superior coverage of Eagle "Chemi-Sealed" TURQUOISE drawing pencils.

The smoothness of TURQUOISE — built in by exclusive methods and *sealed in* by the "Chemi-Sealed" process—is a quality that only you can appraise. The impression of smoothness in any pencil is subject to personal and local factors such as temperature and humidity, texture of paper and pressure exerted on the point.

Therefore, we invite you to make your own comparison of the smoothness of TURQUOISE against the pencil you are now using. We will supply without cost a TURQUOISE pencil in any grade you specify and two metal masks so that you can impartially determine which pencil gives the smoothest drawing qualities in your own drafting room.

Write to us for complete testing equipment, mentioning this publication and your supplier's name.

EAGLE PENCIL COMPANY, 703 East 13th Street, New York

EAGLE "Chemi-Sealed" TURQUOISE

Reg. U. S. Pat. Off.

DRAWING PENCILS



LETTERS

Remote Review

Forum:

I am constrained to comment upon the description of the Texas Centennial Exposition published in the July FORUM, and in doing so to call attention to two important facts which were not mentioned therein and which in my judgment are worthy of emphasis.

One of these is the fact that this exposition is largely housed in permanent structures. Unlike others comparable to this in size and importance—Chicago, 1893 and 1933-34, St. Louis, San Francisco, Buffalo, Philadelphia—when the Dallas exposition closes the structures will not be torn down as having fulfilled their purpose and lived their full span. Fully 65 per cent of the expenditure and more than 75 per cent of the area has gone into permanent buildings and improvements. The spirit and pride, both local and State, which built this exposition had the courage to finance an exhibition plant and a Dallas Civic Center which will stand throughout the years, and wrought in masonry and steel rather than in staff and camouflage. Approximate costs taken from the official records list twenty-eight permanent buildings costing $3,700,000 and sixteen temporary buildings costing $455,000. Eliminated entirely from this estimate are the more than twenty purely entertainment and Midway buildings which are expected to go the way of all former World Fair attractions when the exposition closes.

The other outstanding feature of the Dallas Central Exposition of the Texas Centennial is the lighting.* I cannot claim first hand acquaintance with what has been accomplished in beautiful lighting effects in all recent noteworthy expositions; but when I say that this one achieves a beauty and charm which transcends anything heretofore done I am quoting the composite and unanimous opinion of competent observers who, among them, have seen them all. Mass, line, color, shadow, natural setting, murals, statuary, water reflection, and modern mediums of expression had the careful study and questing experimentation of a brilliant staff of artists which the centennial architect gathered around him, and under the direction of the lighting engineer, C. M. Cutler, loaned to Dallas by Nela Park, new heights of beauty in illumination have been scaled.

After listing the types of architecture in which the general motif of the Dallas exposition is rooted, and implying a preconceived feeling that under the circumstances the results could not be so very good, you admit that "the effect is not so bad." Surely the writer of the article has not seen the buildings thus so lightly dismissed. More evidence that the exposition architecture had been reviewed by remote control is the failure to refer to the more conventional but equally noteworthy State of Texas and Civic Center group of buildings which were designed by various groups of Dallas architects.

I think it is quite generally felt by competent authorities that in the exhibition buildings and general plat and plan Mr. Dahl has achieved a triumph in expressing the message of Texas and its background, and that in doing so he has added development to a form which will stand the test of the future.

As a Texan I am appreciative of your giving due mention to the cultural side of the exposition as represented by the art treasures which have been gathered here.

Contrary to the very false impression given by a recent release of "The March of Time," emphasis at this exposition has been very definitely placed upon the cultural and educational rather than upon resentment toward what our sister city of Ft. Worth is providing in the way of entertainment. Your reference to the latter leads me to say that as a matter of real fact the discussion as to the erection of the sign you mention arose solely over the adequacy of the building on which the sign is placed to safely carry the weight of same as originally designed.

J. H. PAYNE

Dallas, Tex.

*For night view, see page 185.

Texan Payne is too quick on the draw. FORUM's consideration of the Dallas and other fairs past, current and future appears in this issue, page 171, will continue from time to time. Meanwhile, efficient Architect Dahl and his associates may find satisfaction in the quota breaking gate which already has passed 2,578,865 paid admissions, bids certain to exceed the estimated attendance of between 10,000,000-12,000,000 on November 29, when the Fair closes.—ED.

High Cost Housing

Forum:

Wright for President.

Holmes struck a sympathetic note in his "low cost blah" letter. (ARCH. FORUM, July, page 44)

The Federal Government thinks it has discovered something in the idea of low cost housing. Hasn't every architect, that ever lived, continually dealt with the problem of low cost housing? Hasn't every owner and builder, that ever built, made an effort to make his building cost as little as possible?

Blah again.

If the Federal Administration really wants to start something new and of real value to the building industry, they should start High Cost Housing—more profit for the architect—more profit for the contractor—more profit for the material manufacturer—more profit for the workingman—and above or below all, more money for the client and owner to make all of this really swell idea possible.

In reality what is being accomplished by the administration in the building industry at present is low cost housing at a high cost with profit for no one but the politician—and they have taken the money-lender in with them.

And they will soon have the money-printer with them also.

JOHN LLOYD WRIGHT

Michigan City, Ind.

Best Seller

Forum:

We have received the copy of "The 1936 Book of Small Homes" and appreciate it very much. We find that this volume, together with the two issues of THE FORUM that you published on Small Houses, are extremely helpful in talking to clients . . .

MOORE & LLOYD

Houston, Tex.

The "1936 Book of Small Houses" was compiled chiefly from material selected from the October, 1935, and April, 1936, issues of THE FORUM. Recently published, it has appeared in the list of non-fiction best sellers for three successive weeks. Edited by THE FORUM, published by Simon & Schuster, New York, N. Y., price $1.96.

Open Competitions for Public Building

Resuming the discussion which took place at the last A.I.A. convention—the following letters were chosen as representative of the many received in response to the comment on open competitions in the July issue of THE FORUM.

This department will continue to print letters which crystallize best the various aspects of professional opinion on this controversial subject.—ED.

Forum:

. . . Such competitions are conducive to the development of imagination in all and to the encouragement and fostering of the brilliant younger men of the profession.

The record of the poor buildings that have resulted from competitions springs from the "restricted type" of competition where the choice of contestants was not altogether inspired.

The record of "open competitions" has brought to light brilliant though previously unknown men. It has resulted in the birth of architectural ideas which, though not always recognized by the often-times conservative juries which judge them, have nevertheless been destined to influence contemporary design tremendously, as evidenced by Saarinen's Chicago Tribune Building.

The failure of the Institute to advocate the open competition, while at the same time pointing out the necessary safeguards which must be thrown around such a competition to insure a properly executed building, is in my humble estimation, most unfortunate. I trust that their lack of action is only temporary, pending development of articulate sentiment for such endorsement.

W. POPE BARNEY

Philadelphia, Pa.

(Continued on page 68)

"Gentlemen— This coil is cradled in the casing.. Revolutionary"

NOW!

Rigidity goes and with it costly stress and strain.



TRANE *New cradled coil* UNIT HEATERS

Now you can specify propeller unit heaters with a double life! Sturdy Trane Unit Heaters now have a new factor of safety—straight line expansion, made possible by the new Cradled Rail.

The Cradled Coil gives your client protection against stress and strain due to expansion. The Cradled Coil gives the contractor increased leeway in installation. The Cradled Coil removes positively the rigid connection between casing and heater. It multiplies the life of the unit.

This remarkable improvement in unit heater design is one of a long series of improvements contributed by Trane to industry. Solderless coils—high efficiency fans—Freeflo grilles—Floor-Line-Spread. Beautiful units, rounded corners, durable enamel finish, that "fit" in schools and shops as well as factories.

Over sixty sizes, to assure exactly the proper unit for each application—the largest line of propeller units commercially available.

Bring your file of unit heater literature up to date by writing for the new Trane *Cradled Coil* Unit Heater Bulletin now.



THE TRANE COMPANY

BRANCHES IN ALL PRINCIPAL CITIES

LA CROSSE, WISCONSIN

In Canada—Mowat & King Sts. W.—Toronto

HEATING • VENTILATING • AIR CONDITIONING EQUIPMENT

The Trane Company
La Crosse, Wis.

Please send me your new catalog on Trane Cradled Coil Unit Heaters.

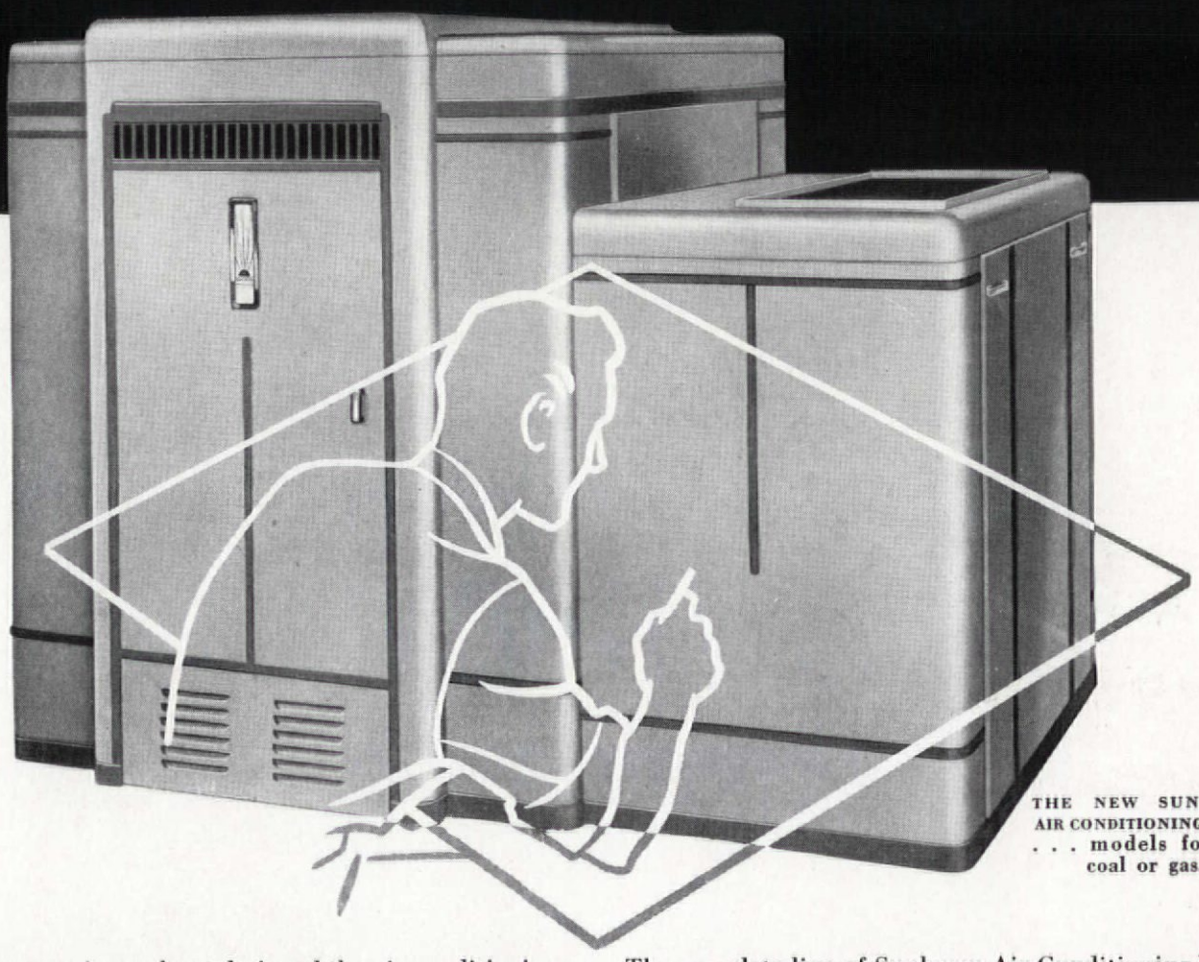
Name _____

Company _____

Address _____

AF-9

MAKE SUNBEAM... YOUR AIR CONDITIONING EXPERT



THE NEW SUNBEAM AIR CONDITIONING UNIT . . . models for oil, coal or gas.

Sunbeam engineers have designed the air conditioning systems for thousands of homes. It is a free service that is available to you . . . an aid in making the homes you plan modern in equipment . . . comfortable and healthful. Layouts, complete in every detail, are promptly made from your building plans. Illustrated installation specifications cover every phase of installing the system. No need for you to worry about this part of the work — let Sunbeam be your air conditioning expert . . . plan your complete installation.

The complete line of Sunbeam Air Conditioning Units provide a model for every home — large or small. Even homes without basements can enjoy conditioned comfort. Every home can have clean, humidified, warm air circulated during the winter and cooling ventilation in the summer. Mechanical refrigeration and dehumidification can be included in the original installation or added at any time.

Write today for complete information on Sunbeam Air Conditioning Units and the free planning service.

THE FOX FURNACE CO., ELYRIA, OHIO

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

SUNBEAM
AIR CONDITIONING
HEATS IN WINTER • COOLS IN SUMMER

THE FOX FURNACE COMPANY, ELYRIA, OHIO

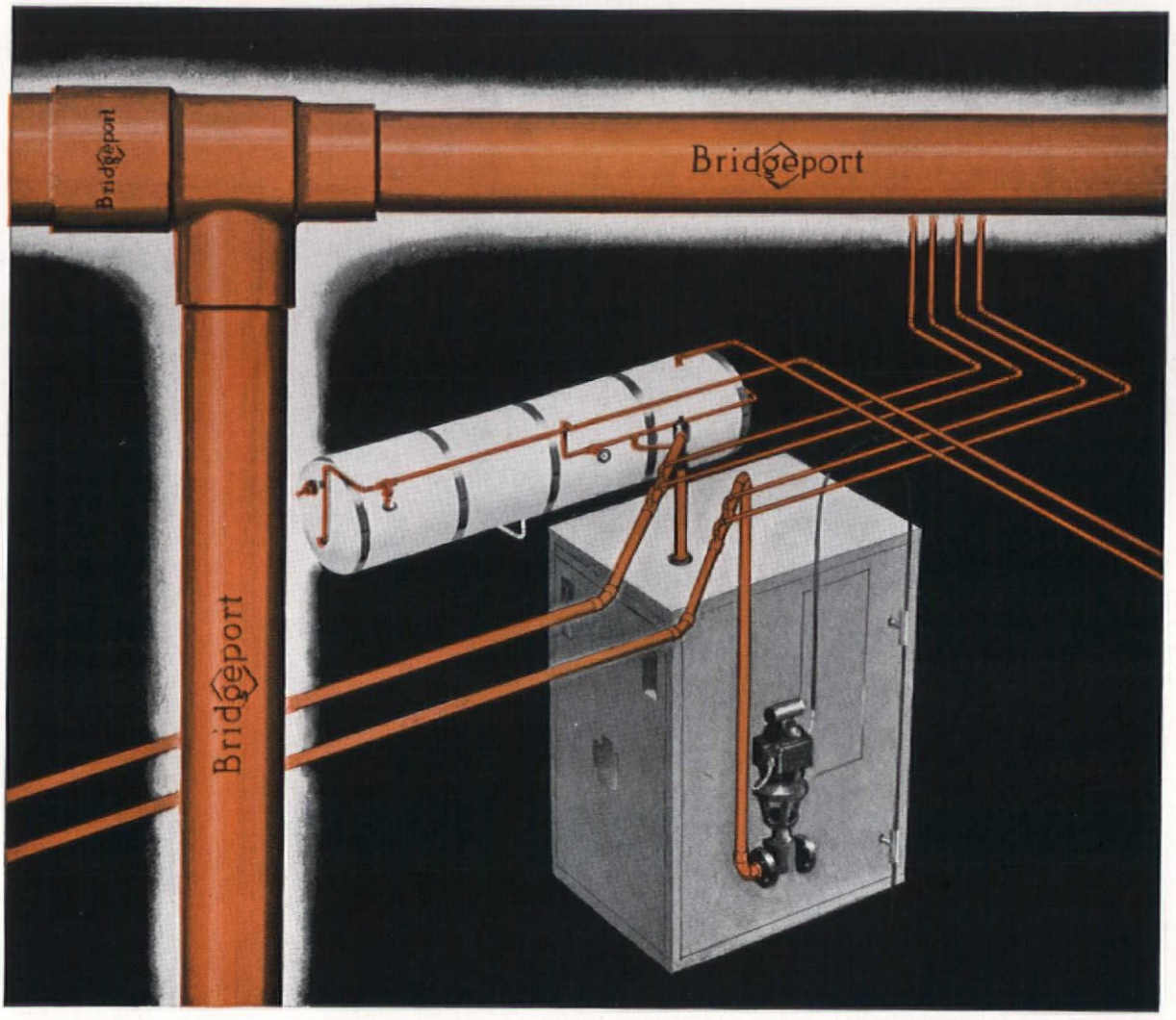
Please send me complete information on Sunbeam Air Conditioning Units and the free planning service.

Name .....

Address .....

City ..... *State* .....

F-9



CONSIDER THE ADVANTAGES OF COPPER FOR HEATING LINES...

GLEAMING copper pipe for steam and hot water heating lines has proved its advantages conclusively—giving the same satisfaction here as for hot and cold water lines, underground service, fuel oil, air-conditioning and sprinkler piping.

Bridgeport Copper Pipe and Wrought Copper Fittings provide copper-to-copper connections that are leak-proof, rust-proof, trouble-free.

Smoother walls—no restrictions within the fittings, and no sharp turns—permit smaller sizes in copper pipe than are needed with rustable pipe. With copper, for example, you can use 1¼" mains instead of 1½" and 2". And the smaller sizes mean *less heat loss* from pipe radiation —resulting in *a great saving in fuel.*

Installations are easy, especially in remodeling, where the soft copper pipe eliminates much tearing up of walls and floors. From the owner's standpoint, the beauty, permanence, freedom from trouble, and first-to-last *economy* of Bridgeport Copper Pipe mean continued satisfaction. For such an installation is practically the same in cost as rustable pipe!

With Bridgeport Copper Pipe and Copper Fittings, the famous Plumrite Brass Pipe and Bridgeport Plumbers' Brass Goods, the Bridgeport line is complete—sold by recognized jobbers everywhere. Specify "Bridgeport."

BRIDGEPORT BRASS COMPANY
BRIDGEPORT, CONN. • ESTABLISHED 1865

"Bridgeport" TRADE MARK

BRIDGEPORT

COPPER PIPE AND FITTINGS

EXACTING CONTROL DEVICES FOR AIR CONDITIONING BY JOHNSON

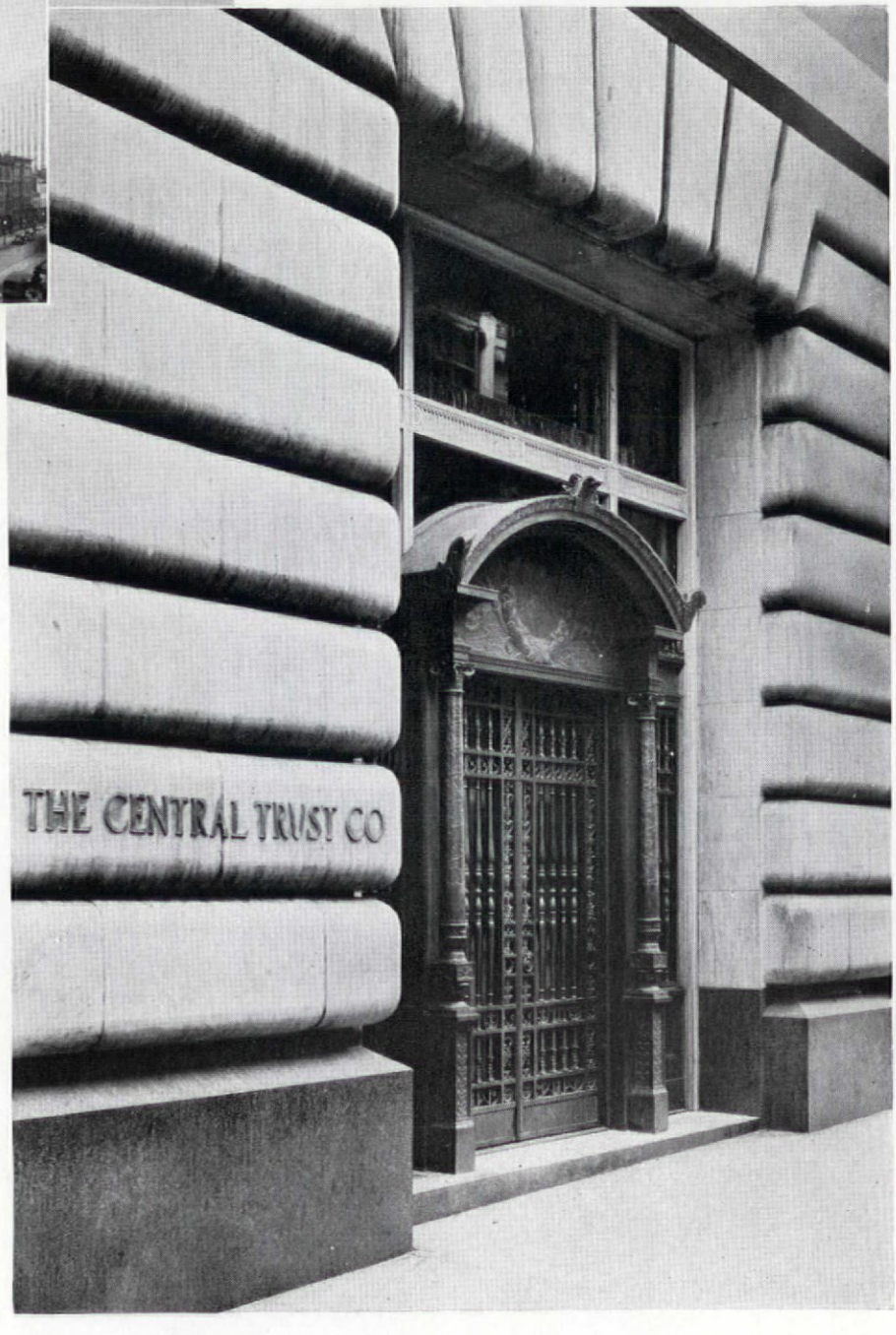




TOP—Neisner Store, Cincinnati, Ohio. Johnson automatic regulation, winter and summer, applied to heating, ventilating, and cooling. Mr. Wm. H. Junker, consulting engineer.

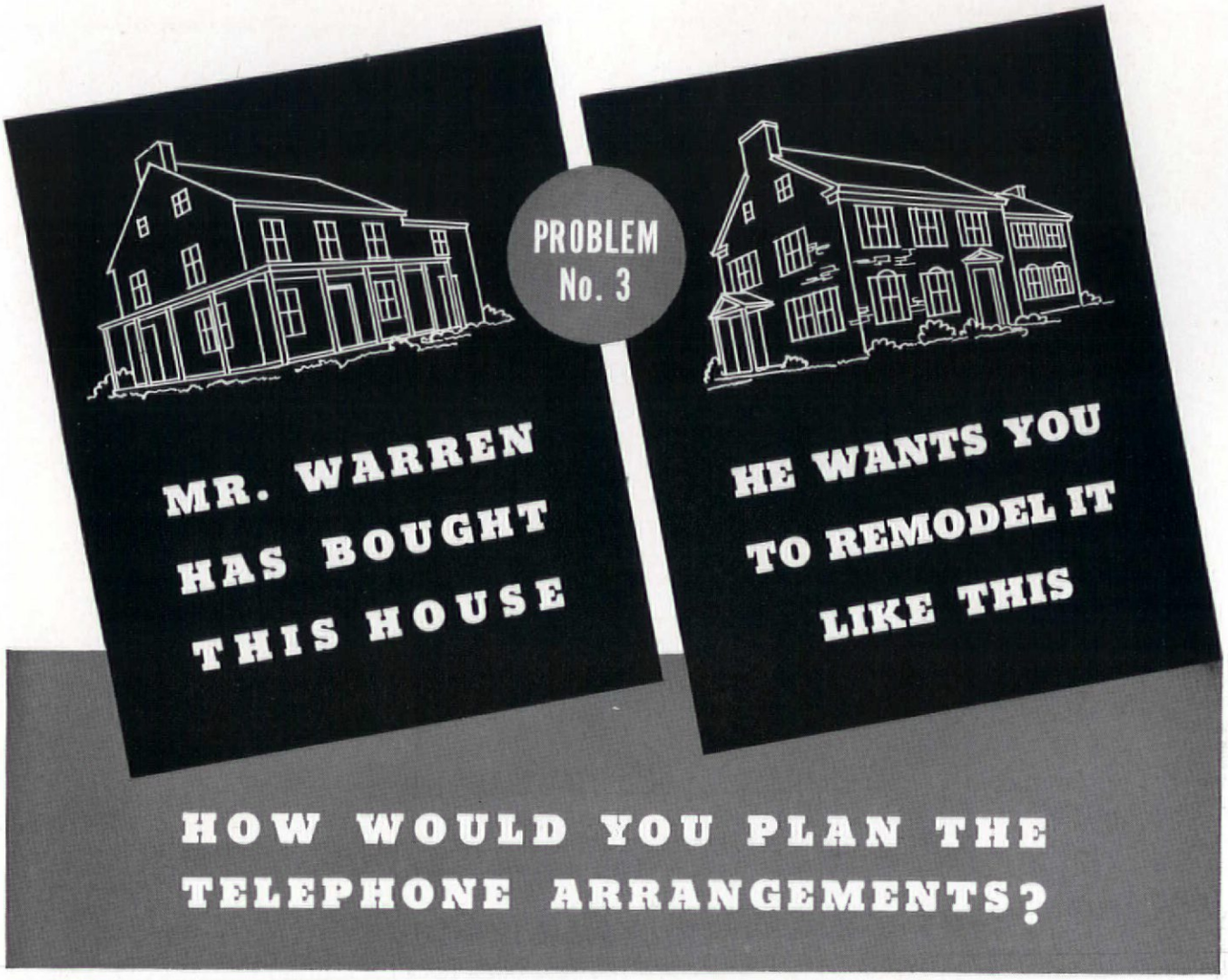
MIDDLE—Shillito Store, Cincinnati, Ohio. Completely equipped with Johnson system of temperature control for air conditioning system. Edw. E. Ashley, consulting engineer, New York. York Ice Machinery Corp., air conditioning contractors.

BELOW—Central Trust Company, Main Office, Cincinnati, Ohio. Johnson automatic control in connection with air conditioning unit in executive offices. Frederick W. Garber, architect; Wm. E. Bodenstein, consulting engineer. W. D. Callan Co., mechanical contractors.



PERFECT CONTROL GUARDS AGAINST WASTE

PERFECT CONTROL GUARDS AGAINST WASTE and is a genuine assurance of satisfaction in air conditioning. The control devices supply the brain work which is most essential in attaining the best results from any air conditioning system. As far back as 1885, Johnson first developed heat control apparatus and has kept abreast of the requirements of the heating, ventilating and air conditioning industries for more than half a century . . . Johnson Service Company, Milwaukee, Wisconsin. Offices in all principal cities.



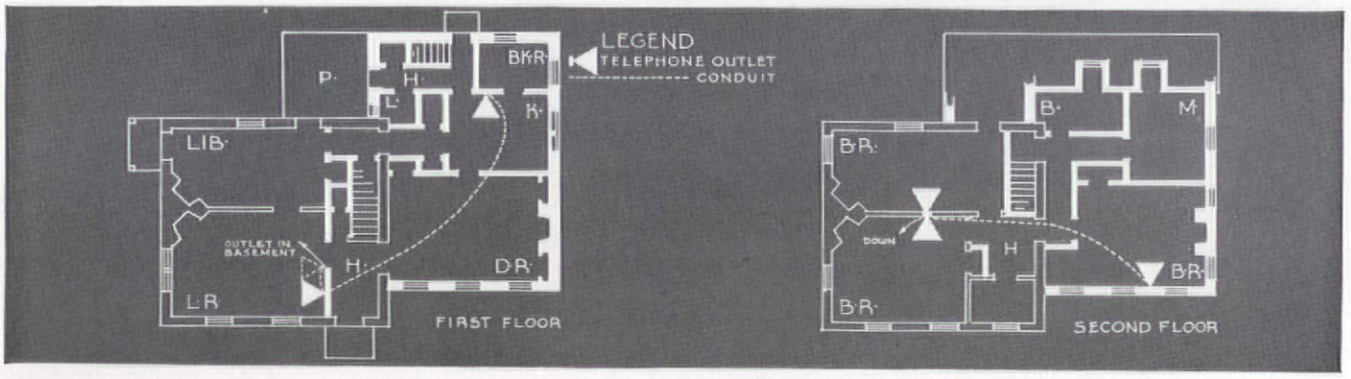
HOW WOULD YOU PLAN THE TELEPHONE ARRANGEMENTS?

THE WARRENS have found *the* house. Not too far from the city. Splendid view. Plenty of space for Harry, 16, and Tommy, Jr., 18. A big guest-room for week-ends. *What telephone arrangements would you recommend?*

First of all, conduit or pipe from cellar to telephone outlets, to avoid exposed wiring and provide protection against certain types of service interruption. Once it's installed in the walls, leading to the right number of outlets, in the right places, the Warrens won't worry about telephone convenience for many years to come.

Now, for outlets. One in the master bedroom, certainly. One in the boys' room, probably, for a portable telephone. Another for a portable telephone in the guest-room—a gracious touch typical of the Warrens. Outlets, of course, in the living-room and kitchen. And, an outlet for a portable telephone in the basement game-room to save steps when this active family is entertaining.

This is a suggested approach to a typical problem. Our engineers will help you develop efficient, economical conduit layouts at any time. No charge. Call your local telephone office and ask for "Architects' and Builders' Service."



Beauty and good design —go hand-in-hand!



The beauty of Certigrade Shingles on both roof and side walls is a complement of good design on this charming Long Island home. Randolph Evans, architect.

...That's why so many architects specify Certigrade Red Cedar Shingles for roof and side walls!

TODAY'S busiest architects are those who are meeting the demand for homes of lasting beauty, permanent value and livable comfort. And in Certigrade Red Cedar Shingles they are finding the answer to their problems.

Nature created a strong ally of the architect in western red cedar. She gave it straight, even grain; beautiful, warm color tones; she impregnated it with a natural preservative which permanently protects it against decay and fungi. She also gave it high insulation value, for each cubic inch contains millions of tiny air-filled insulating cells.

From such material Certigrade Shingles are manufactured. They endure for years, positive protection against hail, rain, sun and high winds. Certigrade homes are much cooler in summer; easier to heat in winter.

Yet no material gives greater value per dollar than Certigrades. First cost is surprisingly low; their long life holds upkeep expense at a minimum. For homes of lasting beauty and economy —specify Certigrade Red Cedar Shingles for both roofs and side walls.

The Certigrade label is your guarantee of Grade. Certigrade Shingles—No. 1, No. 2 and No. 3, each Grade meets a particular need.

insulate as you decorate with . . .



Certigrade

RED CEDAR SHINGLES

FREE! to Architects



Eighty-four pages of valuable shingle information, a *permanent* reference, complete data on roof and side walls. This Handbook solves quickly and scientifically many architectural problems. Written by Bror L. Grondal of the faculty of the College of Forestry, University of Washington, and W. W. Woodbridge, manager of the Shingle Bureau. One copy will be sent FREE to any architect writing us on his letter-head.

RED CEDAR SHINGLE BUREAU
Dept. O-936, Seattle, Washington
Canadian office, Vancouver, B. C.

BUILD YOUR HOMES . . . AROUND A SELLING POINT

HOME COMFORT YOU NEVER DREAMED POSSIBLE

AMERICAN RADIATOR CONDITIONING SYSTEMS



Architects, note: See what the public wants!

"A BUILDER IN NEW JERSEY was convinced when a prospect demanded a duplicate of a house already built, to be built around a new American Radiator Conditioning System. **"**

"A BUILDER IN THE SOUTH could make no sale until he added an Arco Air Conditioner to the radiator system previously installed. **"**

"14 BUILDERS ON LONG ISLAND ordered American Radiator Conditioning Systems as the result of popular acceptance on an 'opening day' staged by a local dealer. **"**

"ANOTHER BUILDER IN NEW JERSEY who features American Radiator Conditioning Systems in his advertising, draws record crowds of home seekers — sells on the strength of this modern home conditioning. **"**

Operative builders in all parts of the country, whose profits depend upon their judgment, are featuring these new systems because they help to sell.

Prospects feel at home in homes that display American Radiator Conditioning Systems. For this best known name in heating — backed by a 50-year-old reputation, by current national advertising, and by the finest kind of home conditioning system — lends its prestige to the homes in which it brings comfort.

AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

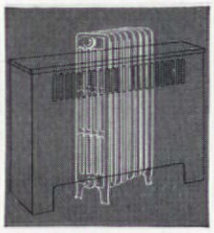
New AMERICAN RADIATOR CONDITIONING SYSTEMS

The better kind of air conditioning with Radiator Heat . . . provides fresh air ventilation . . . humidification . . . air cleaning . . . sun-like radiant heat . . . air circulation . . . controlled heat distribution . . . year 'round domestic hot water.

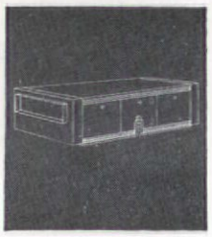
PRODUCTS FEATURED IN NEW AMERICAN RADIATOR CONDITIONING SYSTEMS



New boilers for the small home burn oil, gas, coal or coke



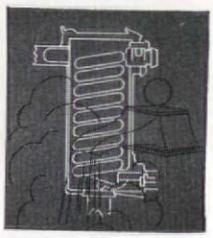
Arco Radiators and Convectors space-saving, smart, efficient



Arco Air Conditioner, the air conditioning part of the system



Arco Copper Pipe and Fittings for heating as well as plumbing



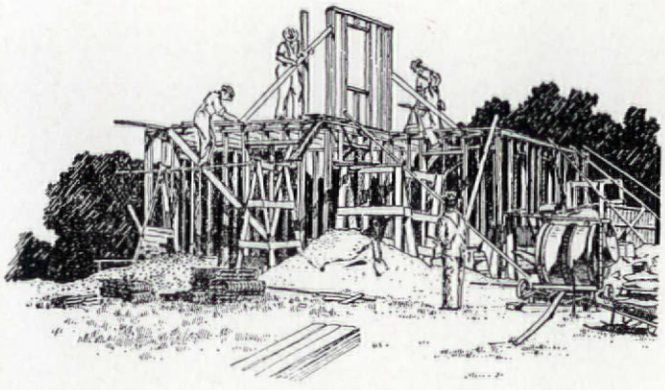
Domestic hot water . . . can be part of every system

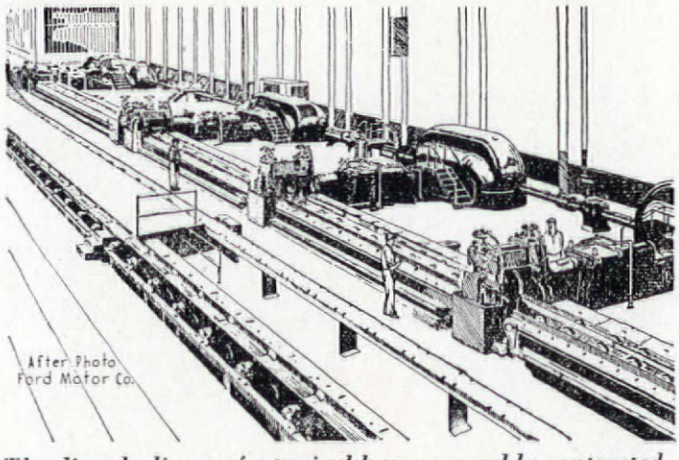
American Radiator Company
40 West 40th Street, N. Y., N. Y.
Please send me information on American Radiator Conditioning Systems.
☐ I am a builder
☐ I am an architect

NAME.....
FIRM NAME.....
ADDRESS.....STATE.....
CITY.....

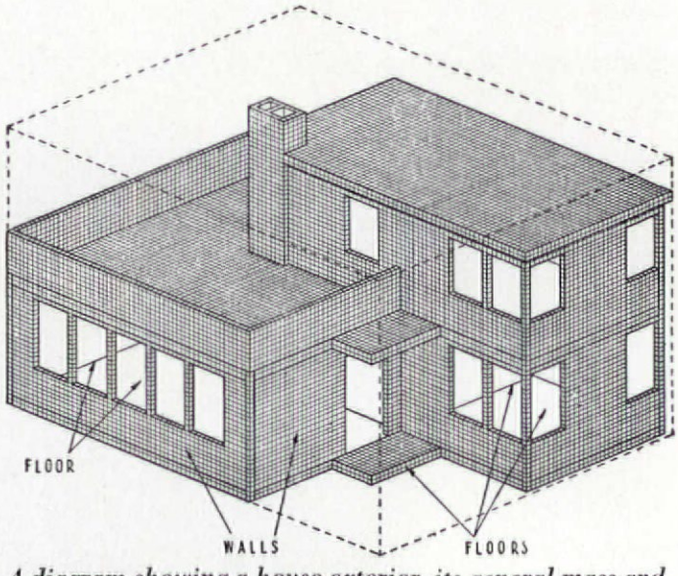
BOOKS

Standardization and the house today . . . . Specification, 1936 . . . . Old missions in Texas . . . . A comprehensive book on modern theater design . . . . A history of furniture and decoration . . . . Hellenistic architecture.





The disorderliness of a typical house assembly contrasted with the order of an automobile production line.



A diagram showing a house exterior, its general mass and details based on a cubical module.

THE EVOLVING HOUSE, VOL. III: RATIONAL DESIGN, by Albert Farwell Bemis. The Technology Press, Cambridge, Mass. 625 pp., 9½ x 6½, 110 illustrations, $4.00.

"Rational Design" concludes the series of three volumes, of which the first traced the development of shelter from caves to present-day houses and the second analyzed present housing conditions and costs. The third completed shortly before the author's death, deals with the application of modern production methods to the house. Mr. Bemis points out, as have many before him, that the building industry stands on the lowest rung of the industrial ladder: "It is only slightly mechanized; it is not integrated; it is non-cooperative as to standards for its product; and it pays practically no attention to distribution." Great quantities of building materials and equipment are, to be sure, mass produced with great economy, and standard windows, doors, framing members, wall panels, and so forth are to be found on the market. These standardized materials, however, lose much of their effectiveness because they are rarely related to one another and their assembly means cutting and patching and inevitable waste of time and materials. In other words, these "standardized" materials when they arrive on the job are no better than raw materials which have to be processed all over again. Until standards are set up which apply to all parts of the house there can be nothing approaching the efficiency which obtains, say, in an automobile factory.

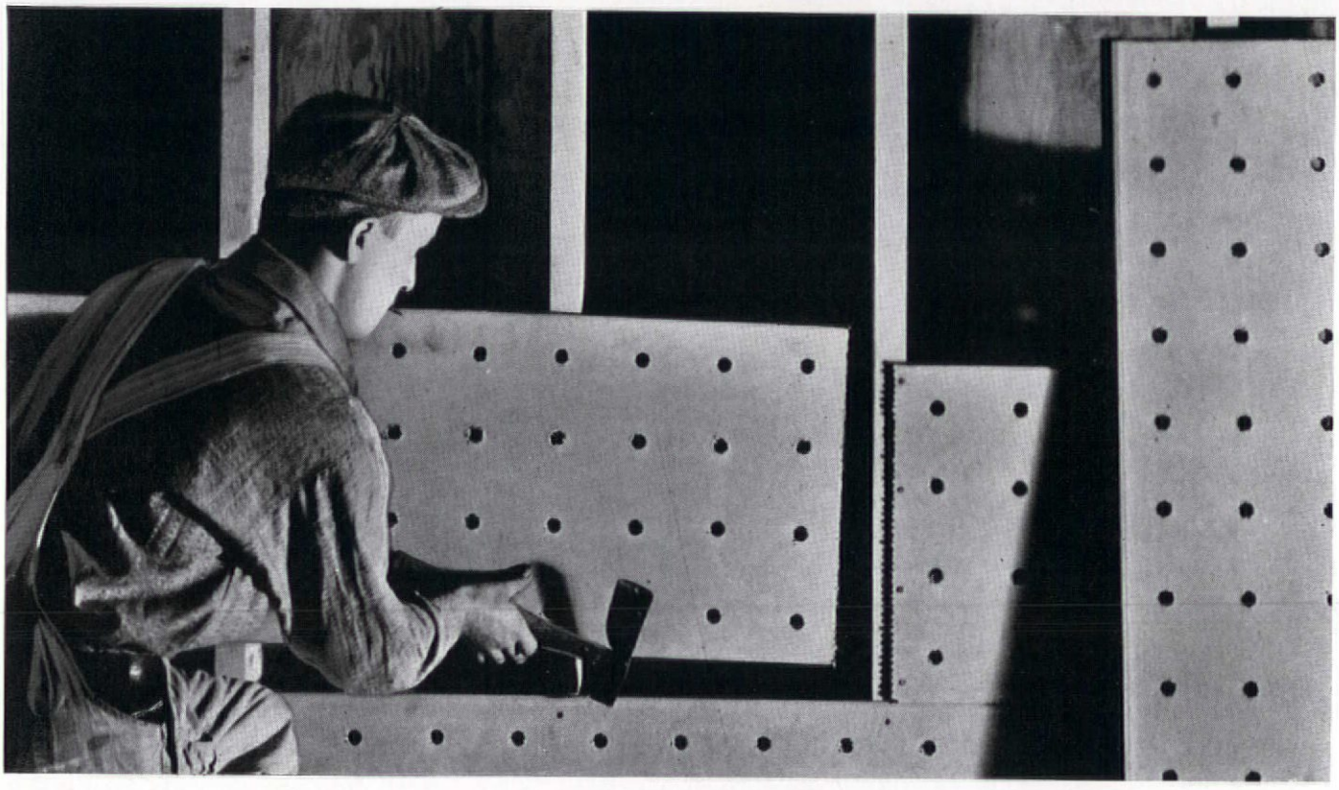
In his preliminary examination of the pioneering work of such men as Gropius, Atterbury, Kocher, and others, the author claims to find nothing offered so far representing a broad attack on the problem of the complete house, and the efforts made up to date are usually concerned with the exploitation of a specific product or a particular method of wall and floor construction. A modular system—and most of the new panel type structures are based on one module or another—would obviously seem to be the first step in the rationalization of building. The use of a linear module in building is as old as architecture but Mr. Bemis points out that its application has been architectural, not structural. The linear module, however, is no complete solution since vertical as well as horizontal dimensions must be considered. The result of the author's research has led him to the conclusion that the basis of a mass-produced house whose parts are interchangeable and which is capable of rapid assembly requires that a cube be taken as the suitable module of design. It is on this conception of a three-dimensional standard that the book is based. The theory of cubical modular design is presented in considerable detail and with a conviction obviously based on long study, and after the working of this system is fully explained, its application to present-day building methods and materials is examined.

The theoretical four-inch stud wall thickness is adopted as a module for purposes of demonstration, and is applied to all types of building construction. The four-inch module is not presented, however, as the ideal unit and the author points out that a three-inch unit would in many respects be more useful. Aware of the fact that more conservative architects will tend to regard any method of modular design as restrictive, Mr. Bemis devotes considerable space to explaining by means of

(Continued on page 64)

PERFORATED ROCKLATH
THE FIREPROOF LATH

Gives Unequalled Fire Protection at the Price



■ Equal Protection in face of fire can cost as much as twice the low cost of Perforated Rocklath.†

The amazing resistance of Perforated Rocklath to fire is proved by test made at the laboratories of the Bureau of Standards.* At the conclusion of the test, a Perforated Rocklath partition, plastered with one-half inch of Gypsum Cement Plaster, was shown to have qualified for a one-hour fire rating.

Perforated Rocklath is made of gypsum. It is fireproof as gypsum is fireproof. It will neither burn nor support combustion. It is easily applied, the large units go on rapidly. It can be "scored" along a straight-edge and broken as needed.

PLASTERERS PREFER PERFORATED ROCKLATH

Perforated Rocklath is three-eighths of an inch thick, 16 inches wide and 48 inches long. It has three-quarter inch circular perforations, spaced four inches apart. Plasterers like the "feel" of plastering over this unique lath. The plaster keys through the perforations — takes hold in a new way as he runs the trowel over it.

USG

† *Trade-Mark*
* *Complete information of test on request.*

TESTED 3 YEARS ON PACIFIC COAST

Perforated Rocklath is not an experiment. It has proved itself in every way — in laboratories, in the field. Millions of feet of Perforated Rocklath are now in use — and thousands of homes are safer to live in because of it.

Perforated Rocklath is patented and manufactured exclusively by the United States Gypsum Company. . . . Mail coupon for Free large sample of Perforated Rocklath.

UNITED STATES GYPSUM COMPANY
300 West Adams Street, Chicago, Illinois
Please send me a free sample of USG Perforated Rocklath. AF9

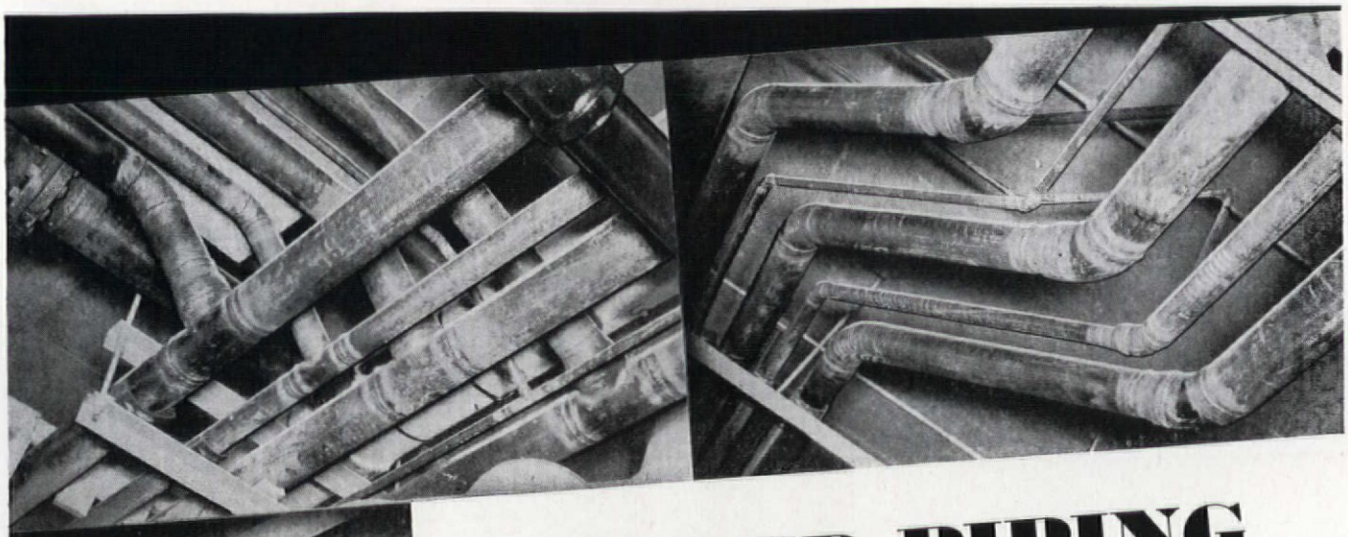
Name .....

Address .....

City .....

State .....

UNITED STATES GYPSUM COMPANY





WELDED PIPING *scores again!*

In June of this year Armour & Company placed in operation its new abattoir in Chicago, the largest in the United States, with a capacity of 12,000 cattle a week.

More than 70,000 feet of pipe, ranging in size from ½" to 12", make up the system for supplying water, steam, air and refrigeration for processing, cleansing and sterilization—and all of it, *including the small sizes*, is welded.

The decision to weld, made after careful consideration, strongly substantiates the simplification, the reduction in initial and maintenance costs and the increased operating efficiency now recognized as benefits afforded by welded piping.

The use of AIRCO oxygen and acetylene and welding apparatus and supplies, supplemented by the practical cooperation extended by AIRCO, was in this case, as it always is, a factor contributing to the splendid results achieved.

Architects, engineers, and piping contractors are invited to call upon AIRCO for information about welded piping and for assistance in preparing welded piping specifications. Write us.

As the illustrations testify, this project stands as a splendid example of welded piping and is a credit to the M. J. Corboy Co., of Chicago, the plumbing and heating contractor.

AIR REDUCTION
SALES COMPANY

General Offices: 60 East 42nd Street
New York, N. Y.

DISTRICT OFFICES and DISTRIBUTING STATIONS in PRINCIPAL CITIES

A COMPETITION

SPONSORED BY HARNISCHFEGER CORPORATION, MILWAUKEE, WISCONSIN

FOR SMALL HOUSES

Designed to employ the
Harnischfeger Steel Frame Construction System

$1,750 IN PRIZES

1st prize	$1,000
2nd prize	500
3rd prize	250

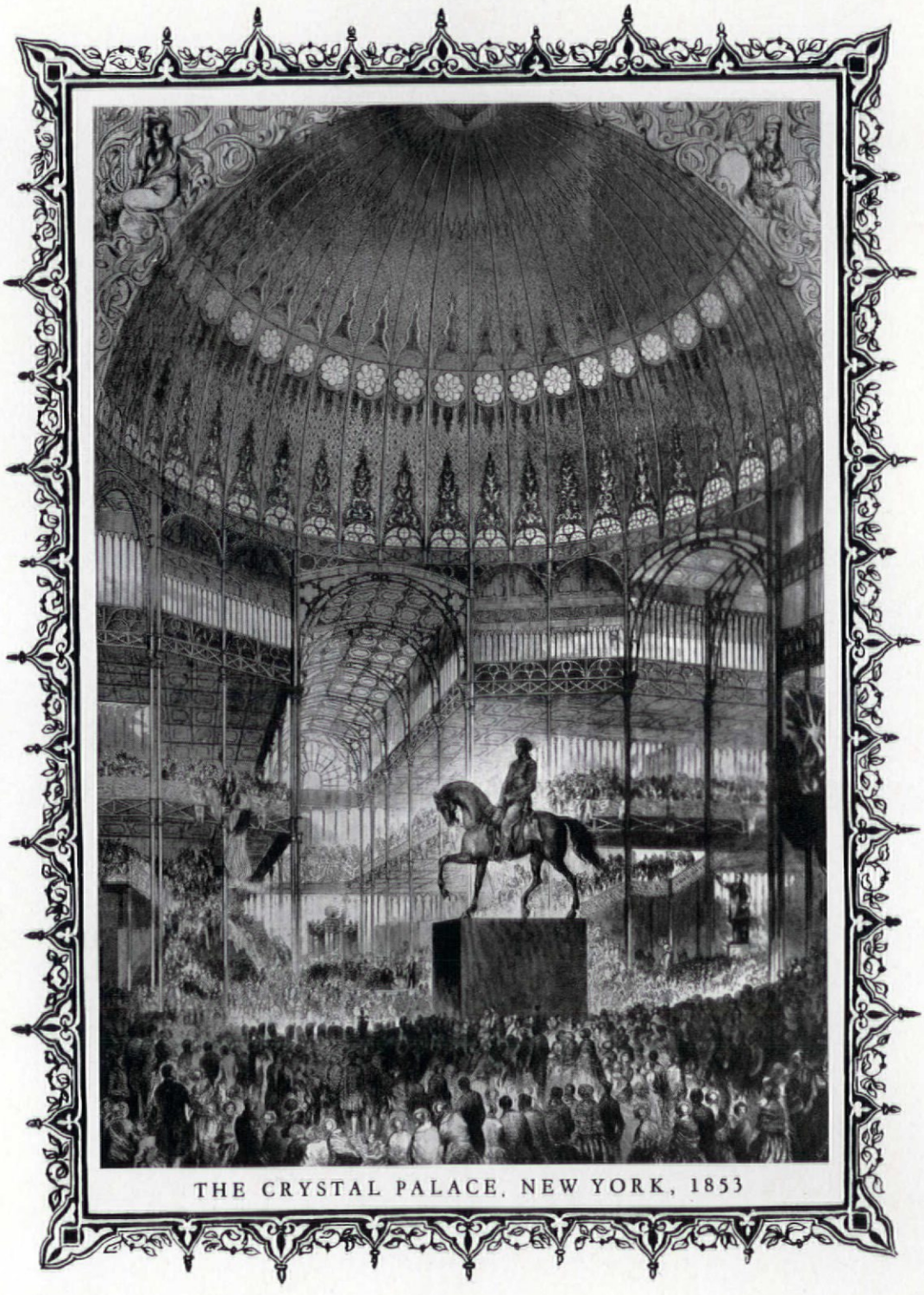
COMPETITION OPEN TO ALL ARCHITECTS, DRAFTSMEN AND DESIGNERS

COMPETITION CLOSES NOVEMBER 16, 1936

SEND IMMEDIATELY FOR PROGRAM AND FULL PARTICULARS TO THE ARCHITECTURAL FORUM, 135 E. 42nd STREET, NEW YORK CITY

HARNISCHFEGER CORPORATION, HOUSES DIVISION

MILWAUKEE, WISCONSIN



THE CRYSTAL PALACE, NEW YORK, 1853

FAIRS

their lusty ancestry; their vigorous maturity; their present indecisiveness; and what of New York 1939?

More than any other corporate human activity, fairs picture an epoch. How people live, what they are interested in, their amusements, aspirations, and beliefs, what they wear, how they travel, how they kill each other and reduce infant mortality—all these are reflected in fairs, which since the middle of the past century have been taking on fantastic proportions. Fairs had a vital reason for existence in the beginning: for centuries they were the only means of exchanging goods and spreading culture on a large scale. They rarely were held to commemorate an event, because no such excuse was required.

Today our market is permanent, and the commodity fair given way to the department store. And for the advertisement of new things there are the papers, the magazines, and the radio. It is not merely chance that as the basic functions of fairs have become atrophied, the development of highly complicated amusements on a vast scale has accelerated, until at Chicago in 1933 it was no longer possible to determine just what was the underlying purpose of the World's Fair.

Human existence has become too complex for a Fair to present all its phases without drastic simplification, and a measure of interpretation. It is significant that the outstanding fairs of the present century have not only been small but have each dealt with a specific phase of life. The pattern that served the large fair for nearly a century is no longer workable.

Here is a critical review of the history of fairs, an examination of the existing fair pattern, and a forecast for the immediate future. What that future holds can only be conjectured. But one thing is certain: unless their influence is to stop at the turnstiles, fairs must change.



"The fair's the place where you get new ideas"



FROST FAIR ON THE THAMES, 1683

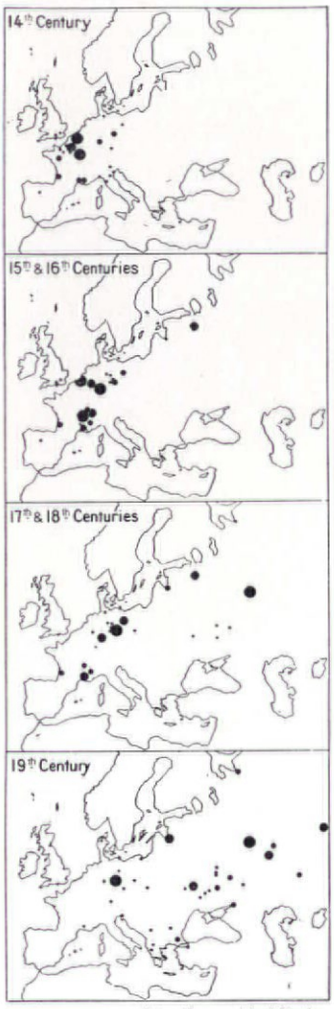
FAIRS BEGAN



millenniums ago. Whenever men made more than they needed for home consumption, whenever they stopped fighting long enough to trade, local markets tended to expand into something larger. The early commodity fair was the answer to primitive distribution problems, and its primary purpose was the exchanging of goods. From the beginning, however, two other tendencies asserted themselves: the urge to self-glorification and the desire for amusement. Thus Xerxes held a 180-day fair to show the power of his huge empire, as did others before and after him. But even when the expressed purpose was other than commercial there was always a fringe of itinerant vendors and mountebanks who saw to it that propaganda was suitably mixed with business and pleasure. This triple character of fairs should be noted, for with few exceptions it has persisted down to the present day. In classic times fairs were held regularly and at frequent intervals; under the Romans they became a means of trading with conquered provinces, and a subtle aid to the legions in the spreading of the *Pax Romana*. After the invasions from the North all commerce ceased, and

Now it came to pass in the days of Ahasuerus, (that *is* Ahasuerus which reigned, from India even unto Ethiopia, *over* an hundred and seven and twenty provinces:)
2 *That* in those days, when the king Ahasuerus sat on the throne of his kingdom, which *was* in Shushan the palace,
3 In the third year of his reign, he made a feast unto all his princes and his servants; the power of Persia and Media, the nobles and the princes of the provinces, *being* before him:
4 When he shewed the riches of his glorious kingdom and the honour of his excellent majesty many days, *even* an hundred and fourscore days.

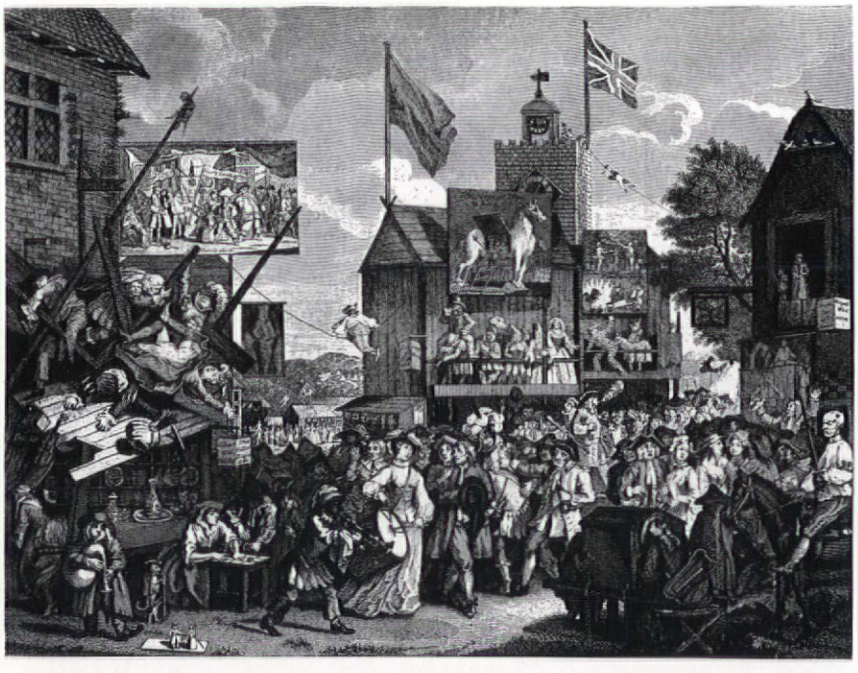
The Book of Esther,
Ch. I, Verses 1-4



From Geographical Review

The above illustration shows the gradual eastward migration of the great commodity fairs of Europe. It will be noted that by the nineteenth century these fairs had almost ceased in France and Germany, and Russia had become the last important center. Circles of four orders of magnitude are used to show approximate importance.

it was not until the seventh century that fairs flourished again in Europe. Under royal patronage France became a great trading center, and to the fairs in England went Venetians, Genoese, Flemish, French, Spanish, and Norwegian merchants. In both Far East and West similar conditions produced similar developments. At Hurdwar and Mecca the great religious pilgrimages led to commodity fairs, and in Azcapazalco and Tascala the ancient Mexicans traded slaves and pottery. France was the most important center for fairs until the sixteenth century, developing a new type which passed from one small center to another throughout the year, constituting, in effect, a permanent market. The religious wars of the sixteenth century destroyed French supremacy and Germany took the lead. During this period Russian fairs steadily grew in importance. At Nijni-Novgorod grew up the greatest commodity fair ever held; here, in 1863, over $80,000,000 worth of goods were sold,* a figure probably never equalled before or since. With improved communications the commodity fair gradually lost its reason for existence, eventually becoming specialized, with traders going to Caen for linens, to Warsaw for hops, to Archangel for fish, oil, and down, to Tobolsk for fats. Specialty fairs, too, declined after a time, and today the only examples are local livestock fairs, still held in many countries. By the nineteenth century another change had taken place: the specialty fair became the sample fair, where manufacturers displayed goods to the trade. These have grown steadily, with Leipzig, Lyons, London, Bordeaux, and Birmingham as the main centers. But in the meantime a new type, born with the Industrial Revolution and nursed by man's insatiable curiosity and ambition, was developing.

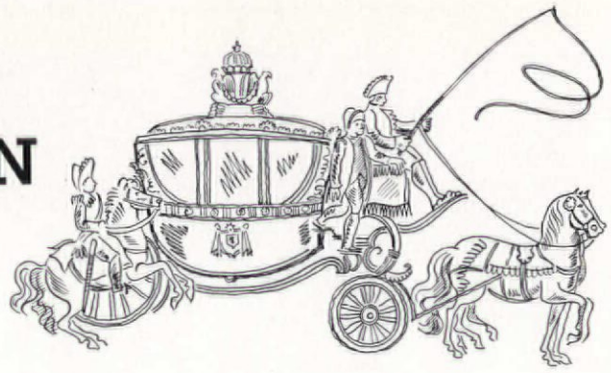


SOUTHWARK FAIR.

Engraved by T. Phillibrown from the Original by
WILLIAM HOGARTH.

*During its best year, 1930-1931, Macy's, largest U. S. department store, did a business of about $99,000,000.

THE MODERN PATTERN



1797

By 1789 most of the great French commodity fairs were abolished. Eight years later, also in France, appeared the first national industrial exposition. It was organized by one Marquis d'Aveze who wished to find some means of disposing of the tapestries and porcelains from the warehouses of the royal factories of Gobelin, Sèvres, and Savonnerie, which had been closed during the Revolution. The expedient was successful and was repeated again in Paris the following year, with a greater variety of products on sale. Official recognition followed, and it was decided to have a similar exhibition each year. By 1806 there were 1,400 exhibitors, and in 1849, year of the last national exhibition, there were 4,494. At this time the idea of an extension of the exposition to include the products of foreign nations occurred to the Minister of Agriculture and Commerce. French manufacturers jealously opposed the change, however, and the honor of holding the first International Exposition fell to the English.

1851

And to Prince Albert, the credit. In June, 1849, the Prince Consort, at a meeting of the Society of Arts, outlined a scheme to the Society of Arts for an Exposition of the Industry of All Nations. As in France there were objections from the manufacturers who feared the loss of trade secrets. The continental governments were similarly lacking in enthusiasm, being afraid that their people might become infected with English "radicalism." One by one objections were overcome by the enthusiasm of the Prince, and in 1850 building operations began. America entered the exposition with false teeth, newspapers, air-exhausted coffins, McCormick's reaper (which created a sensation) , Colt's pistols (a novelty in Europe) , Power's Greek Slave, chewing tobacco, parlor stoves, and artificial legs. There was no midway: no mere amusement devices had the fascination of machinery, most of which had never been seen by many of the visitors. Today the Exposition of 1851 is remembered for the one building which housed it: Paxton's Crystal Palace, a superb creation of iron and glass, 1,848 feet in length, covering nineteen acres, its delicate supports occupying one two-thousandth of the total floor area. Under this magnificent structure was one of the most important fairs ever held. For here the world first became fully conscious of the possibilities of the machine.

Dearest Uncle,

I wish you could have witnessed the 1st May, 1851, the greatest day in our history, the most beautiful and imposing and touching spectacle ever seen, and the triumph of my beloved Albert. Truly it was astonishing, a fairy scene. Many cried, and all felt touched and impressed with devotional feelings. It was the happiest, proudest day in my life, and I can think of nothing else. Albert's dearest name is immortalized with this great conception, his own, and my own dear country showed she was worthy of it. The triumph is immense, for up to the last hour the difficulties ——were immense——. You will be astounded at this great work when you see it! ——the beauty of the building and the vastness of it all. I can never thank God enough. I feel so happy, so proud. Our dear guests were much pleased and impressed.

Queen Victoria to the King of Belgium, May 3, 1851



Brown Bros.

THE CRYSTAL PALACE.

TO THE EDITOR OF THE TIMES.

Sir,—Will the Crystal Palace prove waterproof? I much doubt it. I have no faith in skylights: who can, who has had anything to do with them? How many of your readers will call to mind the trouble they have taken, and the vexation they have endured, with some three-feet square skylight over a passage or staircase. You paint, putty, and patch, and then await, with some impatience, the first shower. It comes, and your skylight proves stanch; you chuckle, and rubbing your hands triumphantly, exclaim—"Ah, ah! this time I have done it;" but, alas, your triumph is short-lived; some weeks afterwards, on coming down stairs after a pelting night of rain, you stumble over two washhand-basins and a slop-pail, which (your house being already flooded) Betty has placed there to catch the drops. Now, Sir, the roof of the Exhibition building is one immense skylight, constructed of the unmanageable materials iron, wood, glass, and putty. Much ingenuity and skill have been displayed in its construction, and yet, on Monday last, when I visited the building, the rain entered in hundreds of places. If this be the case already, what have we not to fear after a few weeks of a scorching July sun! The putty shrivels, the wood cracks, the iron expands; and, while this state of things exists, one of the thunderstorms so prevalent at that period of the year takes place and turns our Crystal Palace into a huge slough of despond.

Wet or damp in any shape is destruction to the valuable articles which will be exhibited, and before sending their goods the manufacturers must be satisfied that effectual means have been taken to exclude rain.

It is, I believe, intended to cover a portion of the roof with linen as a protection against the sun. I would suggest that the whole of the roof be covered, and that the material used should be rendered waterproof; this might be done at slight additional expense by saturating the material with linseed oil. A covering so prepared will not exclude the light, and, if carefully looked after, and kept in good order, will probably prove the best protection against both sun and rain.

In conclusion, allow me to add that no one more highly appreciates than I do do the ingenuity, skill, and enterprise displayed in the erection of this building, and the indefatigable zeal of the various committees of management; and I hope shortly to hear that the difficulty I have now started is numbered among those they have already overcome.

I am, Sir, your very obedient servant,

BRIGHT STEEL.

Sheffield, March 22.

THE TEMPO INCREASES AND.



Leslie's Weekly

1853

The sheer audacity of the Crystal Palace captivated the world and for years afterwards no fair was considered complete without an imitation. Two World's Fairs were held in 1853, one in New York and the other in Dublin. The outstanding feature of the New York Fair was not its Crystal Palace, however, but the first passenger elevator. The main building was adequate but in no way noteworthy. The fair, nevertheless, had a great effect upon the visitors and marked a tremendous acceleration in the development of machinery. Crystal Palaces appeared again in Paris in 1855, in London in 1862, and in Paris again in 1867.

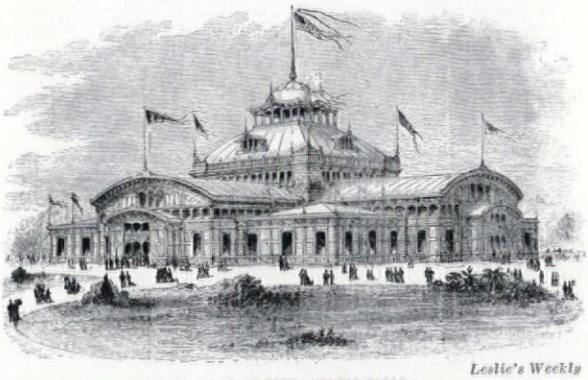


Courtesy, Museum of City of New York

CRYSTAL PALACE, NEW YORK

1876

In 1876 Philadelphia held the second of America's World's Fairs. It was a huge success and, despite the ghastly jigsaw work and saccharine sculpture, displayed a growing consciousness of things artistic. Symptomatic were the books on interior decoration, the success of the Queen Anne house put up by England, the Agricultural Building, conceived in the most inane form of Victorian Gothic, and other oddities. There were 167 buildings, including the inevitable Crystal Palace, over 30,000 exhibitors from fifty countries, and here for the first time the world had an opportunity to see what America had done in agriculture, transportation, and manufacture. There was the invention for transmitting a weather map by telegraph. There were perforated veneer chairs, soda fountains designed to meet the "demand for elegant and artistic apparatus," folding bedsteads, locomotives, an Egyptian mummy, and "Iolanthe dreaming" modeled in butter. Japan had her first opportunity since the signing of the Commercial Treaty to show her goods to America. As in London in 1851, no amusements could compete with the fascination of new inventions, and the crowds flocked to see the Krupp guns, the Vienna bakery, the Chinese pavilion, and sewing machine displays. There was the exhilaration of a new consciousness of power. The country as a whole was profoundly impressed by the sudden realization that the Machine Age had arrived. All was confidence and excitement. It remained for a later generation to wonder what was to be done about it.



Leslie's Weekly

WOMEN'S PAVILION, PHILADELPHIA

ARCHITECTURE JELLS

1893

saw one of America's great fairs: the World's Columbian Exposition in Chicago. Much had happened since the Philadelphia Centennial: electricity was the marvel of the age, manufacturing had increased a hundred-fold, and a depression was ending. In the hands of Burnham, White, St. Gaudens, and Olmsted a strange and wonderful exposition took shape. Lagoons, miles of colonnades, and sculpture and painting on all sides created a stupendous setting. There was no suggestion that among the pure Roman, pure Greek, pure French palaces were to be found electric street cars, pneumatic tires, or the 325-ton Reynolds-Corliss quadruple expansion engine. But for all that it was very white and impressive—and Chicago had never seen a classic building before. It led to a whole series of plans for "Cities Beautiful" whose avenues and Roman facades ignored the festering slums behind them. But in all the beautiful whiteness there was one inharmonious note: Louis Sullivan's Transportation Building, the only organic conception in the lot. The Fair was a delight to millions; but to Sullivan it was a tragedy, and in his bitterness he wrote a stinging denunciation—and a prophecy.

"Crowds went away spreading over the land, carrying what they had seen—the carriers of contagion unaware that what they had beheld and believed to be truth was to prove, in historic fact, an appalling calamity . . . a naked exhibition of charlatanry.

"Thus architecture died in the land of the free and the home of the brave—in a land declaring its democracy, incentiveness, unique, daring enterprise, and progress.

"Thus ever works the pallid academic mind, denying the real, exalting the fictitious and false.

"The damage wrought by the World's Fair will last for a half a century from its date, if not longer. It has penetrated deep into the constitution of the American mind effecting there lesions significant of dementia."









Photos, Brown Bros.





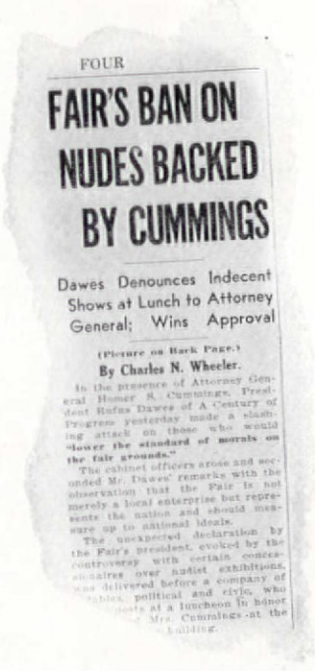


THE 1900's





THE present century opened with high hopes and new scientific wonders. The Spanish war was over and the horseless carriage had become the automobile. Movies had been invented; McKinley was assassinated, Hearst was on the way up, and Roosevelt I was getting out his big stick. High-speed tool steel was developed and Anna Held's milk baths were the talk of the country. In a steady stream the quantum theory, the airplane, electric fixation of nitrogen, synthetic resins, automatic bottle machines, and tungsten lamps appeared. The era of dime magazines and muckraking journalism had opened, and the Flatiron Building was the greatest sight in New York. Vitamins and streamlining were discovered, and Europe was preparing for bigger and better wars. The Louisiana Purchase Exposition in 1904 inaugurated bigger and better fairs with twice the acreage of the Chicago Fair, and managed to lose the round sum of $15,000,000. Over a hundred automobiles were on display, one of which had made the trip from New York to St. Louis. The displays from Europe were on an unprecedentedly lavish scale, with a reproduction of the Grand Trianon from France, great chemical exhibits from Germany, a replica of a building at Kensington Palace from England, and a full-size Roman villa from Italy. Japan appeared with eighty thousand articles, and there was a 47-acre Philippine Reservation to show Americans what they had just acquired. The buildings in the Fair made Chicago seem bare by comparison. They were in the French style, then



FOUR

FAIR'S BAN ON NUDES BACKED BY CUMMINGS

Dawes Denounces Indecent Shows at Lunch to Attorney General; Wins Approval

(Picture on Back Page.)

By Charles N. Wheeler.

In the presence of Attorney General Homer S. Cummings, President Rufus Dawes of A Century of Progress yesterday made a slashing attack on those who would "lower the standard of morals on the fair grounds."

The cabinet officers arose and seconded Mr. Dawes' remarks with the observation that the Fair is not merely a local enterprise but represents the nation and should measure up to national ideals.

The unexpected declaration by the Fair's president, evoked by the controversy with certain concessionaires over nudist exhibitions, was delivered before a company of ...ables, political and civic, who ...ests at a luncheon in honor ... Mrs. Cummings at the ... building.





in an advanced state of decay, and every elaboration that the diabolical ingenuity of the architects could devise was incorporated. The Alaska-Yukon-Pacific Exposition at Seattle followed in 1909. It was undistinguished. A vastly different affair was the exposition which opened in San Francisco in 1915 to commemorate the opening of the Panama Canal. Unlike St. Louis, the fair was placed on undeveloped ground: no existing parks were destroyed; unlike previous fairs it did not take man's development through the ages as a theme, but confined itself to the years since 1904, a new indication of the speed with which things were beginning to happen. Its architecture showed the influence of Chicago's White City, but a new element of fantasy entered into the design. The styles were played with and changed, and this type of treatment, combined with superlative lighting, produced a fair whose festive appearance was well in keeping with the mood of its visitors. With this last of America's great international fairs came the War and a changed world. The Wembley Empire Exhibition in 1925 was an expression of a desire for comprehensive planning, and of doubts concerning the benefits of uncurbed industrialism. The 1925 "Exposition des Arts Decoratifs" started a hectic series of modernistic fads, based on nothing more fundamental than a weariness with old things. The Sesquicentennial Exposition in Philadelphia was a fiasco. By way of contrast there was a series of small fairs, each devoted to a single subject, such as books, housing developments, or industrial arts. Their comparative success indicated a coming change. A fair could no longer hope to show everything. Mere size had become exhausting, not impressive.





Brown Bros.





German Railroads

Hedrich-Blessing

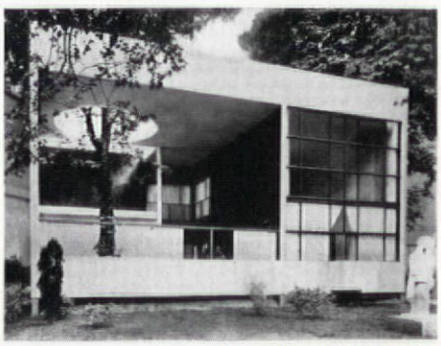


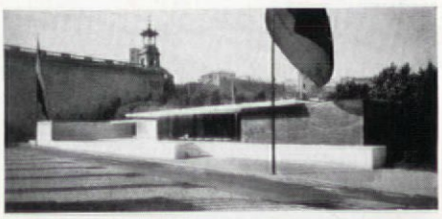


American-Swedish News Exchange

THE NEW ARCHITECTURE

The influence of fairs on architecture has already been noted. The Queen Anne house entered America by way of a fair; the Crystal Palace introduced a new conception of structure; and the 1893 Exposition was responsible for the classic vogue. The new architecture appeared in a brilliant form with a large hall designed by Gropius and Meyer for the Exposition of 1914 in Cologne. It impressed architects, particularly by its convincing use of glass in large areas. Le Corbusier's pavilion at the 1925 Exposition in Paris gave him a start towards world fame, thanks to the efforts of the directors to hide it. Other buildings appeared from time to time, but the first fair consistently to apply the principles of contemporary architecture was held in Stockholm in 1930. It was a compact, powerful display of Swedish arts and crafts, and owed its integrity and unity to the strong guiding hand of Gunnar Asplund. Like Burnham's classic facades, the modern fairs have strongly influenced architecture. The movement spread steadily, so that by 1933 the designers of A Century of Progress felt it was safe to "go modern."





Photos, Museum of Modern Art



Hedrich-Blessing



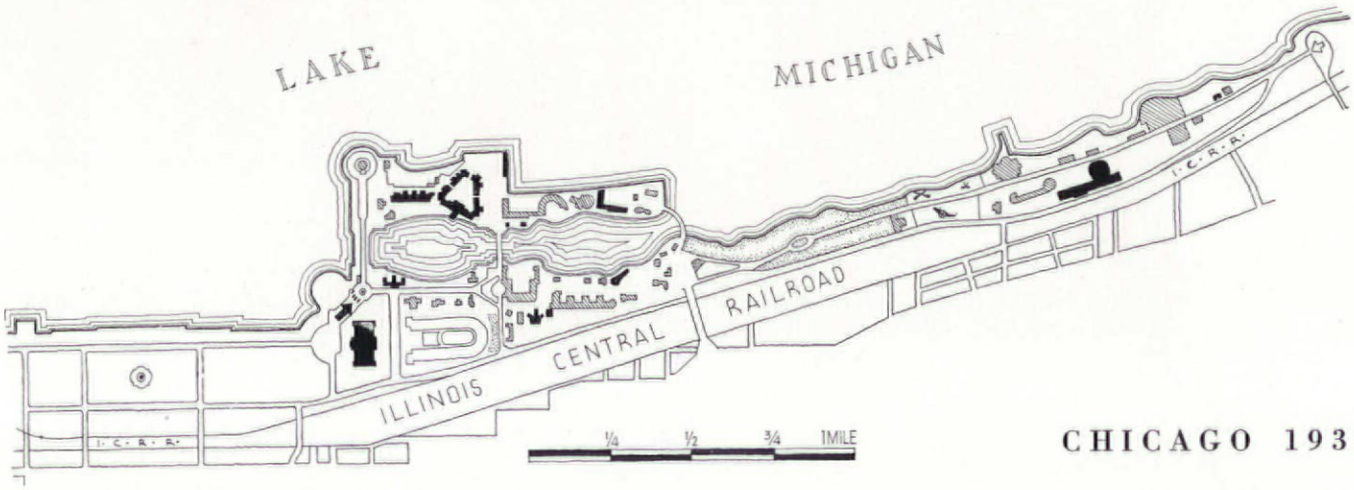
A CENTURY OF PROGRESS 1933

Chicago's last fair was conceived in prosperity and carried out in a depression. It was planned to cost $100,000,000 and ended up at about $30,000,000. The most remarkable single fact about it was that in spite of the times it closed $600,000 in the black. Fifth of the great U. S. fairs, A Century of Progress was not an international exposition; while the nations of the world were given the customary invitation, they too felt the pinch of hard times, and the slackening of world trade made participation seem pointless. There were only three foreign pavilions of any importance, England's exhibit was privately financed, and only eleven other countries entered. The theme of the fair was predominantly scientific, but the strongest impression was made by fan dancers and some 39,000,000 pairs of sore feet. Unlike most previous fairs, where exhibits had been organized with a certain consistency, A Century of Progress saw the triumph of individual industrial exhibitors who dotted the grounds with their buildings. That some of these buildings were excellent did nothing to lessen the chaotic effect they helped to create. The tremendous notoriety given the nude shows was the least fortunate thing that could possibly have happened to the fair; in spite of its many splendid educational exhibits, few visitors came back with more than blurred recollections of colored facades, and vivid memories of Sally Rand. And the fair commission helped matters not at all by segregating the amusement section and all but putting a red light over its entrance. There was a lesson to be derived from the huge popularity of the Midway, but none of the three fairs that have followed A Century of Progress show any awareness of it.

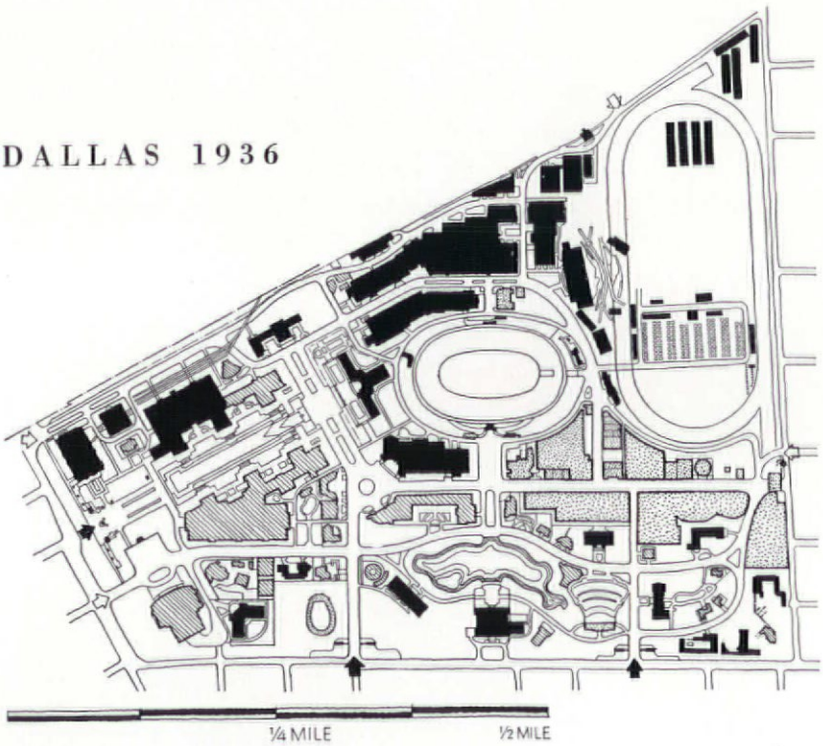
CHICAGO, whether you like it or not, set the pattern for today's fair in America. The three which followed in swift succession—San Diego, Dallas, and Cleveland, differ only in that they have been less ambitious. With the accuracy only a fair can attain, this pattern reflects the national instability. The architecture is "modern," the plan is impressive—and unsatisfying, the theme is grandiloquent, and usually overshadowed by the repetitious efforts of competing exhibitors, while the display experts rise to new heights of stridency in their efforts to attract attention. The public—the hot, the bored, the bewildered, the footsore public—looks briefly and goes off to see the Streets of Paris.

But whatever the flaws in the pattern, let them wait: as an isolated phenomenon the contemporary fair is worthy of consideration.

THE PLAN



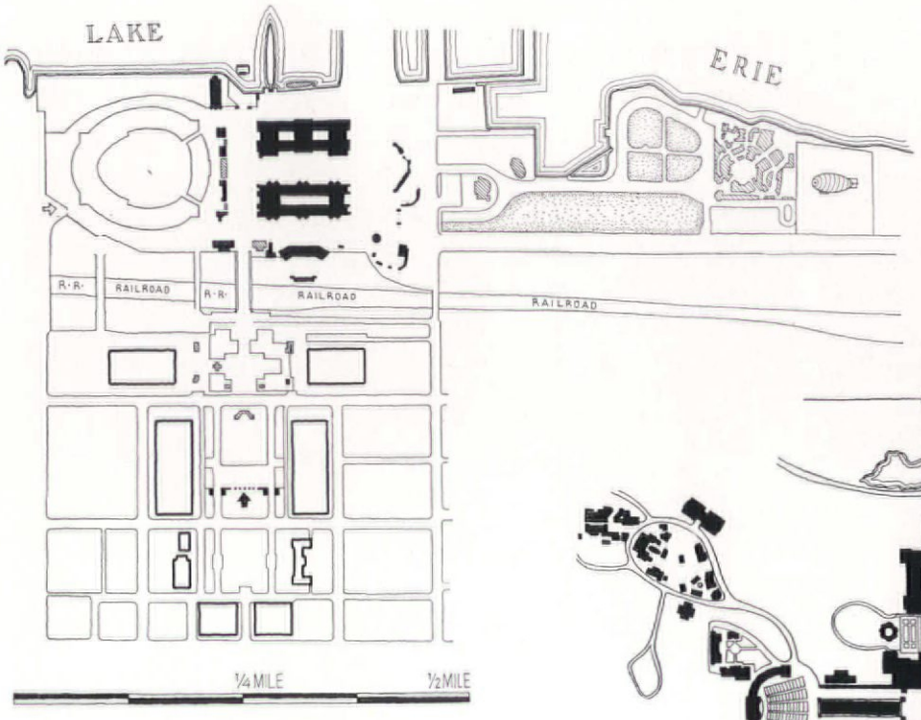
CHICAGO 1933



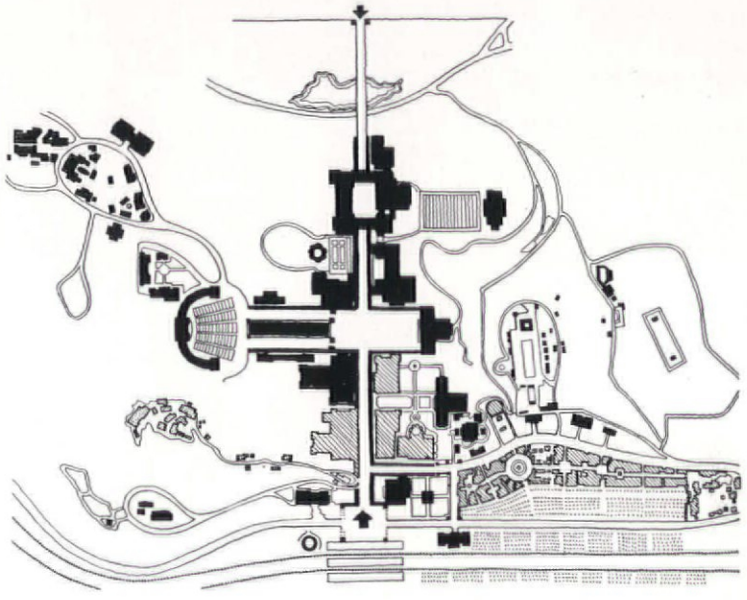
DALLAS 1936

The areas in black are Government buildings or general exhibits. The shaded areas denote private exhibits. The dotted areas indicate amusement concessions. In Cleveland the fair was planned in conjunction with a group of public buildings which are indicated by heavy outline. Permanent buildings appear in the Chicago plan and, with more importance, in the plan of San Diego, where many of the Panama-Pacific Exposition Buildings of 1915 still remain.

Circulation is generally easy, although a plan as long as that of A Century of Progress might well have divided into more clearly defined separate groups. Placing of industrial and other private exhibits is not generally related to the general exhibits.



CLEVELAND 1936



SAN DIEGO 1935

THE SET-UP

The organization of A Century of Progress may be taken as typical. Preliminary efforts by individuals led to the formation of a Board of Trustees, with Rufus Dawes as president. Mr. Dawes called on Raymond Hood and Paul Cret to help set up a design board. These governing bodies proceeded to the adoption of a theme and selection of a site, and upon selection of the latter, each of the architects prepared a sketch, out of which, eventually, came the accepted scheme. At this point a Department of Works was created, with the function of preparing working drawings. Consultants on landscaping, color, lighting, sculpture, etc., were engaged. A Design Committee was set up to cooperate with exhibitors. As the preparatory period drew to a close, a Department of Operations and Maintenance was formed, and with it the Department of Works was merged.

THE PEOPLE

Despite the greater ease of transportation, A Century of Progress had fewer visitors than the big fairs of the preceding century. During its first and biggest year, Chicago had about 22,500,000 visitors,* as compared with 28,000,000 for its 1893 fair, the same number for Paris 1889, and 39,000,000 for Paris in 1900.

For this relatively poor record the depression was no valid excuse—depression attended the opening of four out of the five great U.S. fairs. Moreover not only is population greater, but transportation has ceased to be a problem, and the means of publicizing an event are virtually limitless.

*For its second year, 16,000,000.

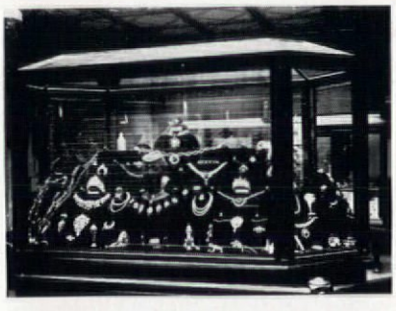
THE INSIDE

The greatest single advance in fairs has been made in the field of exposition techniques. The days of representing Montana with a stuffed cow, or Florida with a bungalow constructed of oranges, have passed. According to Walter Dorwin Teague, an authority in the field, modern exhibit technique is determined by four main considerations: (1) the physical nature of the exhibit, (2) circulation in relation to the exhibit, (3) control of interest, and (4) the theme of the exhibit. The general theory is to sell ideas rather than goods. The idea is dramatized by means of all available methods: dioramas, moving exhibits, light, color, photomurals, captions, and demonstration of processes. The intricate is made simple, and the simple is made interesting by putting it into motion.

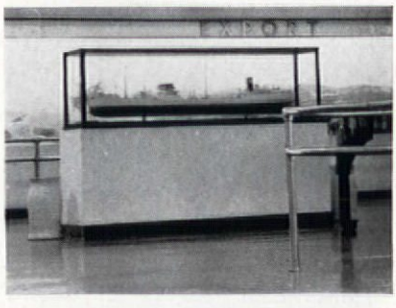


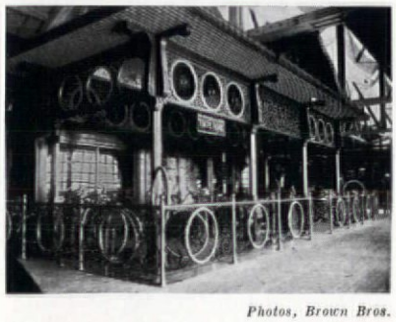
The Shoe and Leather Exhibit at the Chicago Fair of 1893 did not go in for understatement. While there was an undeniably picturesque effect, little stood out to indicate whether it was a leather exhibit or a trophy room. Compare with the radical simplification of the Dupont Exhibit at the Dallas Centennial.





Cases have changed along with their contents. Tiffany's "Million-Dollar Case" at the Chicago Fair fitted the lush days when even diamonds were worn in gross lots. The case in the Texaco Building at Dallas is a utilitarian, inconspicuous object. The contents are the thing.



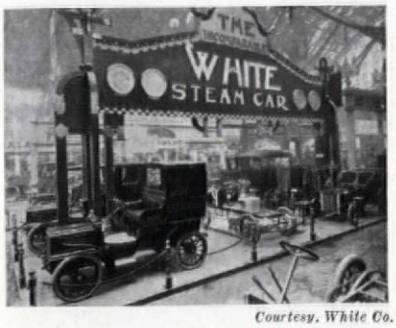


Photos, Brown Bros.

The tendency to take exhibits out of lines of circulation is marked today, as in the Firestone Exhibit at Dallas. Effectiveness is sought by dramatization, not by the mere repetition of a form, as in the bicycle display on the left.

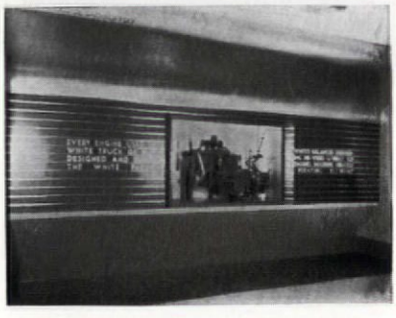


Courtesy, Walter Dorwin Teague



Courtesy, White Co.

Thirty years have altered more than the products of the White Company. The startling contrast between these two exhibits shows how strongly the appearance of today's sleek, efficient machinery is affecting our ideas of what constitutes a suitable setting for it. The 1936 display is by Alexis de Sakhnoffsky.



THE OUTSIDE



The above might be any contemporary fair. The buildings have large plane surfaces, and they look temporary: the monumentality of the White City is still in vogue: lagoons, axes, and fountains play essentially the same part; neon, high-power searchlights, and mercury vapour lamps have made the fair-by-night more dazzling than the fair-by-day; the style is "modern" and is sometimes better and sometimes worse than the buildings shown here. At best there is gaiety and the carnival spirit; at the worst there is confusion, stridency, noise, cheapness.

Today's fairs are supreme efforts: every resource that money can buy, science can devise, or art can invent, lies at the disposal of the designers. Yet there are discontented, challenging voices, and the public's comparative lack of enthusiasm bears them out. At the Crystal Palace the public was so fascinated by the exhibits that no thought was given to amusement. Today no fair dares open without the support of a Midway, and millions yawned as the light from Arcturus opened A Century of Progress. All is not well with the fair: man's capacity for wonder is undiminished, but finding little to wonder at he makes for the roller coasters. Could the pattern be getting a bit stale after all these years?

THE PATTERN PALLS.....

FRANK LLOYD WRIGHT

The Chicago Fair of 1893 was better in every respect than the Chicago "Progress" Fair of 1933. The 1933 Fair took out the same Victorian idea, dusted it off, and adopted it complete.

Insincerity damns the work of the Fair for any future reference except as an eclectic's latest scrap-pile to add to those already known as Americana.

Let us forgive the expediency of these shallow architects for their exploitation of appearances belonging by nature to work deeper than their understanding. Let's say these men did the best they knew how to do with their newest eclecticism. The fact remains that the architecture is false. *It is not architecture, however gaily painted.*

RALPH ADAMS CRAM

Any progress at this Exposition is indicated solely along technological and scientific lines. The architecture is retrogressive. The style adopted is already outrivaled and old-fashioned.

BRUCE BLIVEN

The influence of the fair architecturally will be little. It will make no dent for or against the modern movement which will go along.

HENRY-RUSSELL HITCHCOCK, JR.

Modernism in America seemed still to permit, if not to call for, every vagary of composition and ornament; and the color scheme, which might have brought some unity to a group of buildings apparently designed without any thought of the site, served merely to aggravate and underline the lack of esthetic cooperation on the part of the architects.

The Chicago Fair was memorable for Belgian villages with real snow on the roofs, side shows, fan dancers, and rickshaws.

These comments, it will be noted, deal with the architecture of the Century of Progress, not with the basic thinking behind it. And while criticisms as favorable as these are damning could easily be found to justify the architecture, there is no record of approval of the chaos which the fair produced. The elements contributing to this confused effect were (1) a theme devoted to man's progress, stated in terms that were out of date (2) a complete lack of relation between this idea and the mass of uncoordinated exhibits by individual manufacturers, and (3) the building of a large amusement center which was prevented from becoming an integral part of the fair, and which ended as a successfully competing attraction.

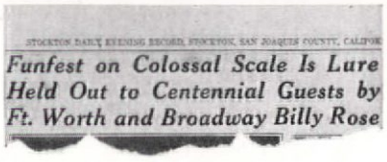
A review of previous fairs demonstrates incontestably that integration is vital, that one basic idea must govern, and that *that idea must be timely*. A fair is more than a collection of lagoons, concessions, and exhibition halls: its success depends upon the kind of thinking behind it. And in view of Chicago's failure on this count, and New York's expressed intention to hold the most important exposition the country has yet seen, to the question "what is a fair?" must be added—"in 1939."

AND IS RE-EXAMINED

A FAIR, historically = local ballyhoo + local business + advertising + education + entertainment and latterly, commemoration.

LOCAL BALLYHOO

The urge to self-glorification is universal. Ahasuerus with his 180-day show, Roman generals and their triumphs, Fort Worth and its play for space in the daily press—they differ only in detail. Self-glorification is the prime motivating factor in the creation of fairs today. But people do not go to fairs to see other towns make a bid for fame.


STOCKTON DAILY EVENING RECORD, STOCKTON, SAN JOAQUIN COUNTY, CALIFOR

Funfest on Colossal Scale Is Lure Held Out to Centennial Guests by Ft. Worth and Broadway Billy Rose

LOCAL BUSINESS

The enthusiasm of hotel-keepers, shop-keepers, theater owners, and filling station proprietors at the prospect of a local fair needs no explanation. There is no doubt that such events stimulate trade, put money into fast circulation, and create work. But, this too is a by-product. People do not go to fairs to improve other peoples' business.



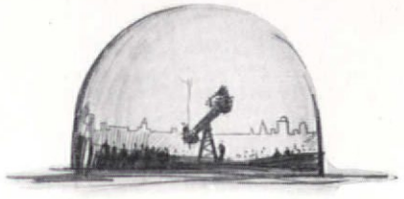
ADVERTISING

at its best is education. The London Exposition of 1851 and the Philadelphia Centennial were devoted almost exclusively to the advertising of new products from all over the world. But newspapers, books, magazines, radio, and the movies have usurped this important function, and advertising-in-fairs no longer has its pristine power.



EDUCATION

is a better drawing card than is commonly admitted. The greatest of fairs have always catered to human curiosity. Whether it is the architecture, as in the White City, machinery, as in New York in 1853, or the products of an empire, as at Wembley, people will come, and in large numbers, if their curiosity and desire to learn are sufficiently stimulated.



used to consist of impromptu contests, and the buffoonery of traveling clowns. It has been more highly organized since. Paris in 1867 advertised trips through its sewers; 22 years later it had Streets of Cairo, panoramas, and Javanese dancers. The World's Columbian Exposition introduced the Midway. San Francisco in 1915 blew up a battleship, had a replica of the Grand Canyon, a working model of the Panama Canal, and a "Joy Zone" whose cost ran to more than $15,000,000. The bright spot in the Sesquicentennial was the 80-acre collection of lagoons with authentic Venetian gondoliers. A Century of Progress had practically everything: restaurants, concerts, Irish, French, and every other conceivable variety of Village, Lady Godiva on a camel, the Sky Ride, a display of incubator babies, and Sally Rand. Amusements are a legitimate part of a fair; conceivably people will go just for these alone, and the Billy Rose venture at Fort Worth is a case in point. But it is safer to assume that they expect it as a compensation for the labors of sightseeing—and possibly as a refuge from the dullness of outmoded educational displays.



On the night of December 11, 1935 the whole question of fairs broke wide open. An unofficial dinner was held at the City Club in New York to discuss the proposed World's Fair, and a distinguished list of speakers included Ralph Walker, Walter Dorwin Teague, Austin Purves, Ely Kahn, Harvey Corbett, Gilbert Rohde, and Lewis Mumford. The majority of the speeches dealt with circulation, displays, and the necessity for a continuation of the present trend in architectural design, but it was Lewis Mumford who put his finger on the fatal flaw in the accepted pattern: "*The wonders of our mechanical age are no longer news!*" With this opening sentence began the most devastating attack on the basic thinking behind the contemporary fair that has yet been heard. The machine, he pointed out, is no longer accepted as an undiluted blessing. At this very time industry, in the frantic rearmament of the world, contains the seeds of the destruction of our civilization. Unemployment, the problems of distribution, and a huge class of machine-tenders who eke out the most precarious kind of day-to-day existence have come out of the machine. Modern man no longer is awed by mechanical ingenuity or scientific accomplishment: he takes the automobile, and transoceanic flights, and television as a matter of course. But he is wondering what it all proves, what it means to him in the way of better living—witness the agitation for decent housing, statistics on the automobile as a destructive agent, the political upheavals in Russia, Italy, and Germany, and the unrest in our own country. Project a picture of a planned environment using modern technical resources to the fullest extent, present the *social implications* of the machine, and you will have a timely theme. A fair presenting the picture of a society consistent with the present state of its technics might "project a pattern which would fulfill itself in the future of our whole civilization." And the "style" of the architecture would take care of itself.

THE NEW PROGRAM

The impression made by this speech on a group that was anything but homogeneous indicated that a vital point had been made. It was a radical proposal, but the idea had that essential timeliness which had characterized the successful fairs of the past. On the basis outlined by Mr. Mumford, a group of young designers went to work on a program which was made public last May.

In this program, which outlined a "Fair of the Future," it was again asserted that "mere mechanical progress is no longer an adequate or practical theme for a World's Fair," that "the most exciting feature a fair could have is the demonstration of the wonders of contemporary life within the reach of the average man." It was recommended that "the traditional scheme of planning the fair as a number of unrelated structures be completely abandoned." It was proposed to create sectors devoted to Housing, Education, Work, Recreation, Health, etc., with each sector divided into a comprehensive general exhibit, and with the related commercial exhibits closely related. The program was submitted to the Fair Directors for consideration.

NEW YORK 1939

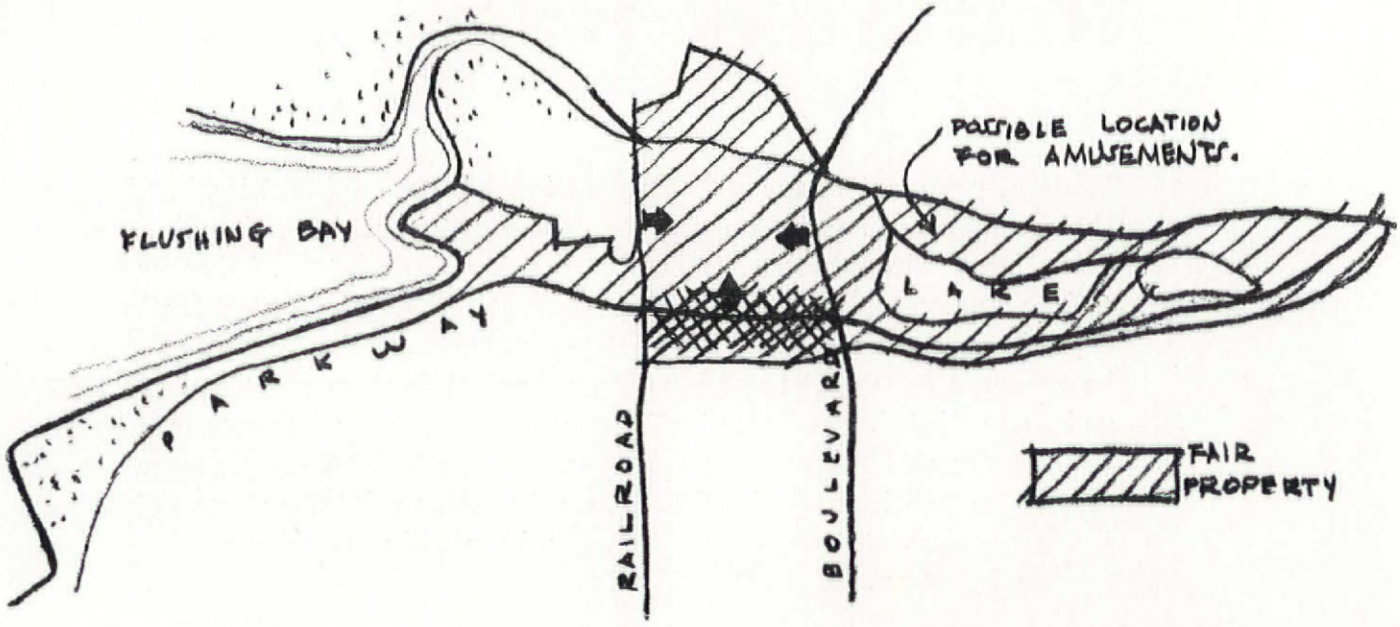
The New York Fair can be one of the world's great exhibitions. There is no indication whether it will take advantage of this opportunity or not. Mr. Grover Whalen, president of the Fair Corporation, has declared that it will "demonstrate that America still possesses vast unrealized potentialities of happiness and well-being for the human race." It will stress America's future. Whether the theme will be Today or Tomorrow is not important. What is important is whether social objectives—the live issues of the day—will be stressed, or whether the public will be expected to look at the same old mechanical displays painted a new color and go home satisfied. The "practical" men will undoubtedly follow the reasoning that if A Century of Progress made money, a bigger fair of the same nature will make more. The politicians will agree. Opposed to them will be some men of vision. But a safe guess is that the fair, in the end, will probably not vary much from the established pattern.

Take one instance. Recipients of the latest semiannual report from President Alfred P. Sloan, Jr. of General Motors Corporation could read of the "continually broadening" opportunity of the motor car "to serve the community from a social as well as from an economic standpoint." Thus does the automotive industry's distinguished commentator underline the fact that the automobile has its social implications, and it ought to follow that a fair, above all else, would also stress these implications. One brand of automobile being as justified, socially, as another, it might be concluded that one comprehensive automobile exhibit—supported by surrounding commercial displays—would be sufficient to get the idea across. Question is, how many manufacturers will be willing thus to give social problems the same stature as commercial exploitation? How many will demonstrate the fundamental evils and cures of traffic, or methods of city planning which will allow an

automobile to travel in safety at more than five miles an hour? How many trace the effects, actual and potential, of the trailer? How many correlate the automobile to the uses of leisure? How many examine its place in the distribution system? A safe guess is that the main attraction will continue to be the good old display of chassis, assembly lines, etc., although everybody knows exactly what they look like already. To display the chassis there will be at least three and probably more separate automobile buildings, adding to the congestion of the grounds and the boredom of the public. And there will probably be at least three of everything else.

These fairs come to mind as outstanding: The Crystal Palace Exposition of 1851, the World's Columbian Exposition of 1893, and the Stockholm Fair of 1930. Each of these fairs was integrated. In each the *fair* was the thing; and each was under the control of one strong personality. If the New York Fair allows competing exhibitors to dictate, if it sells space the way a promoter sells shares it will be a failure no matter how much money it makes.

The plan for the Fair has not yet been announced, but a guess as to its form might be hazarded. Controlling factors are the nature of the land (most of which will not support high buildings), the circulation (which indicates two or three important entrances), and the necessity of having a maximum of desirable space to sell. The



cross-hatched section is the only area, apparently, on which high buildings and heavy machinery can be placed. The present location of the lake suggests that this portion might be used for amusements, restaurants, concerts, and the like, and, unless the existing roads and railroads are changed, the entrances might logically be as shown.

But the plan is important only as it expresses an idea. A good solution of circulation and other problems may be taken for granted. The idea, however, has yet to be announced. It is to be hoped that it will be a good one. The Chicago idea was behind the times in 1933; it is even more so now. Three more years have yet to pass before the opening of New York's fair, and times are changing rapidly. It would be a pity to spend $50,000,000 to create a fair born dead.

HOUSES IN MIDLAND, MICHIGAN

ALDEN B. DOW, ARCHITECT

Two things help the Mid-western architect when he departs from the conventional forms of domestic architecture: one is the absence of a deeply rooted tradition of building, as in New England; the other is the existence of a large body of well known and respected work by Frank Lloyd Wright. By the latter these houses are clearly inspired: the broad, sharply overhanging roofs, the unit cinder blocks, and the interiors clearly express their debt to the pioneering genius of Wright. But this by no means implies that they are mere imitations; their use of materials and adroitly handled plans show a strongly personal approach and an inventive mind. The customary rectangularity of residential design and the sharp division between exterior and interior are characteristics which will not be found in these houses. There is a deliberate maintenance of exterior scale and texture in interior walls, with the same units, whether block or brick, appearing both inside and out; the ceilings, by following the roof slopes and by their emphasis of framing members, further this impression of structural and esthetic unity. The architect's office—and future residence—shown below and on the following pages, is in an attractive setting which is half garden and half water. Here another unifying influence is seen in

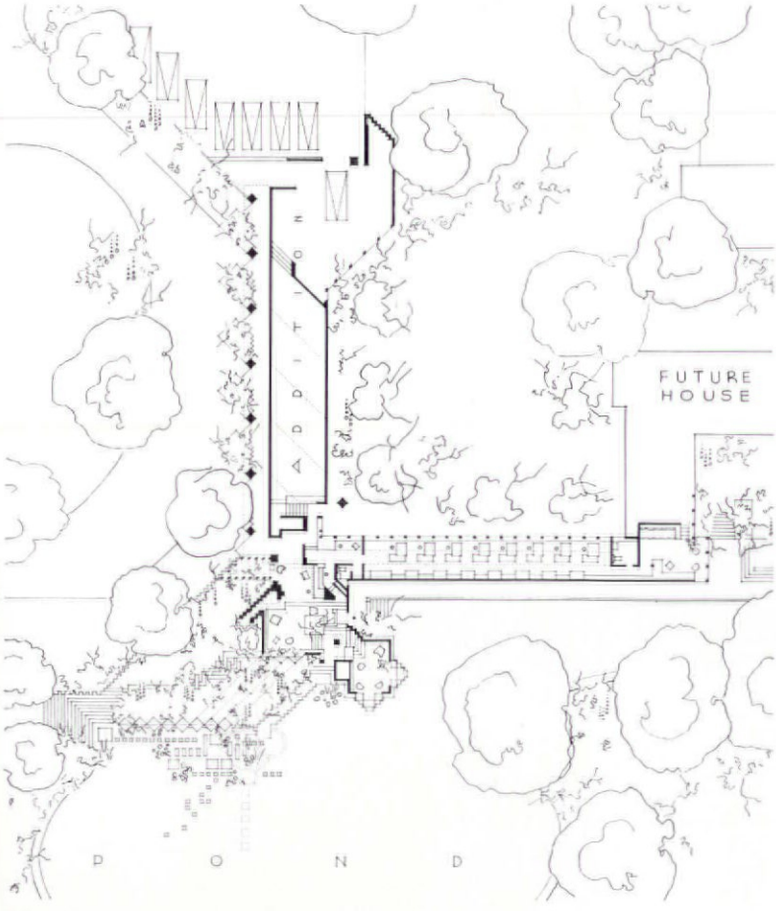




the repeated use of unit cinder blocks, not only for the house itself, but in garden walls and walks as well. Thus the highly organic quality of the house is extended to include the surroundings, and the result is a building which has grown out of a setting instead of being forcibly inserted into it. Ample shade is provided by the overhanging roofs, and the trellis which is an extension of one slope furnishes a frame for vines without cutting off the sunlight from the flowers below. The interiors show an interesting play of surfaces, with effective contrast between angular and round forms. The drafting room is very well arranged for convenient use. Cost per cubic foot, 53 cents.



RECEPTION ROOM



SEE PAGE 200 FOR CONSTRUCTION OUTLINE.



Beutel

DRAFTING ROOM

HOUSE FOR EARL STEIN



Beutel

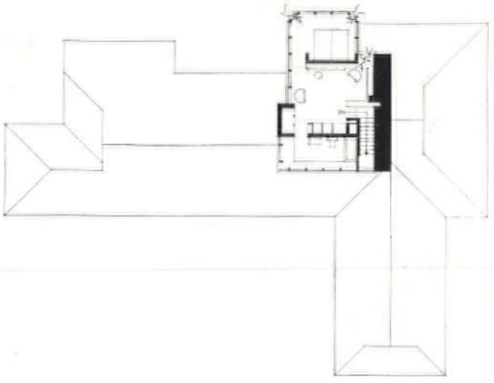
Like the preceding example, the Stein house shows a studied relationship between house and surroundings. The house is of frame with a veneer of common brick, and the same brick is used for the garden walls. In plan the elements are well disposed, and the exterior shows a clear articulation of the major space units. The plan is worth careful study for its skillful combining of indoor and outdoor living spaces, and for its knowing handling of wall and window areas to produce an effect of spaciousness. A house designed in this manner has twice the apparent space of the tightly enclosed residence of a more conventional type. It will be noted that lighting fixtures in the main rooms of all these houses are conspicuous by their absence. Cost per cubic foot, 55 cents.

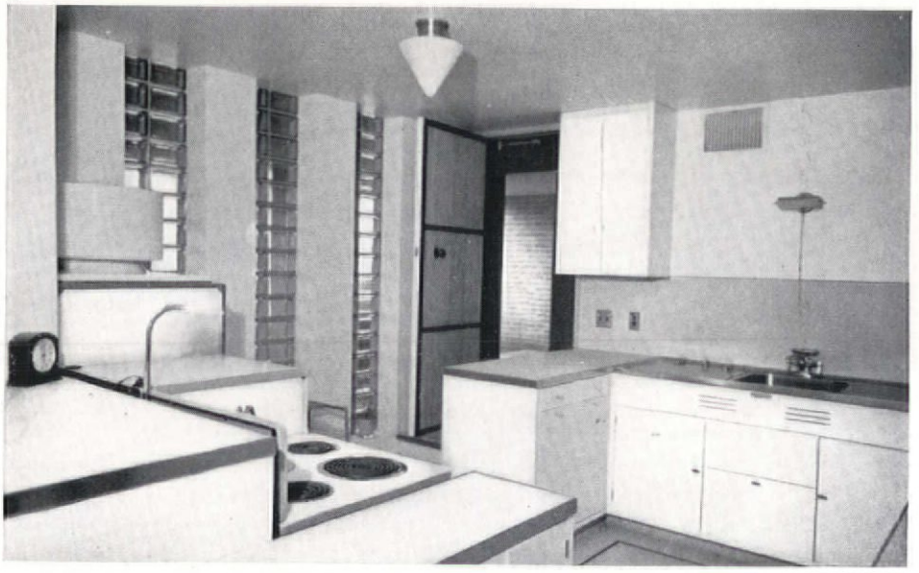




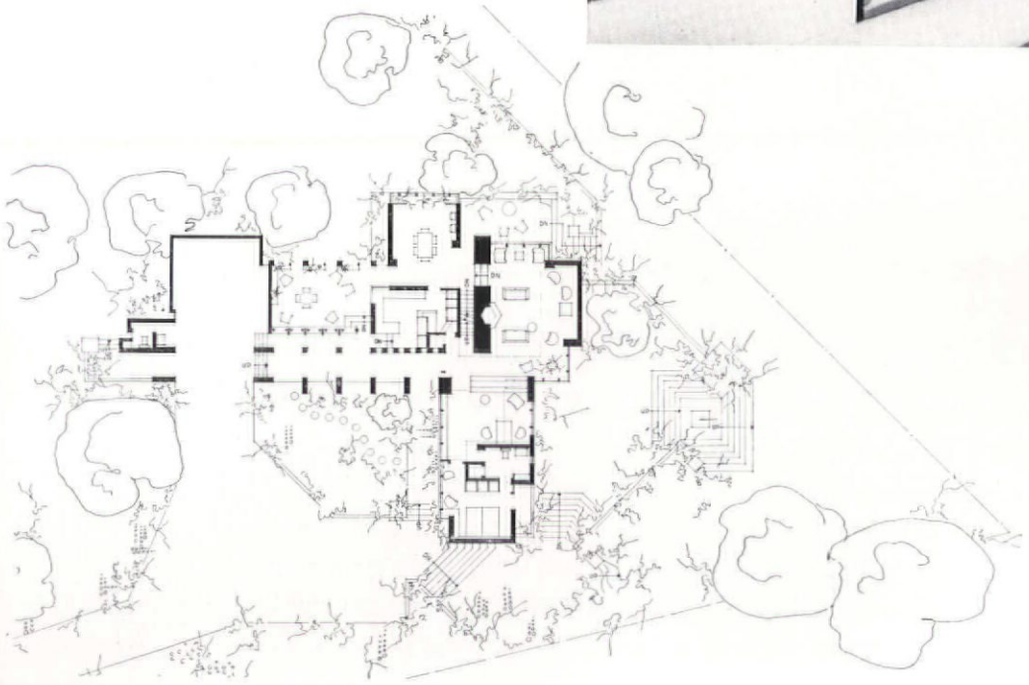
Beutel Photos

LIVING ROOM





KITCHEN





HOUSE FOR J. A. CAVANAGH



Beutel

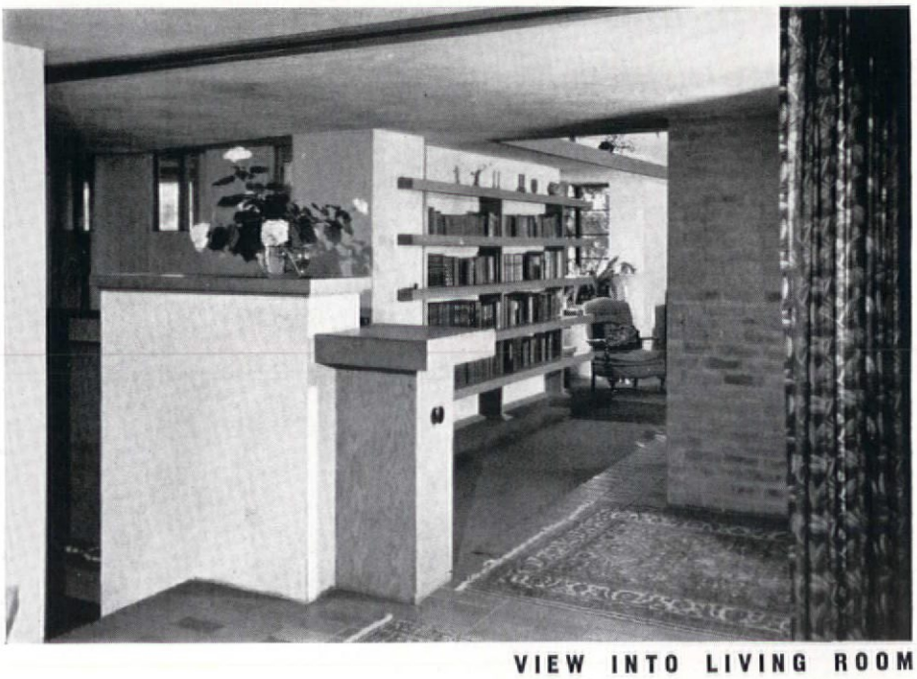
LIVING ROOM —DINING ROO

A notable feature of these modern houses is the frequent and consistent use of pitched roofs, whose heavy overhangs add, if anything, to the strong horizontal quality of the houses. Here the main room takes advantage of this pitch to gain added height. Much of the furniture is built in. The master bedroom is located on the living room floor, with additional sleeping quarters on the level below. The relatively large amount of space devoted to living room space is unusual: there are two large rooms on the first floor and another downstairs. Cost per cubic foot, 44 cents.

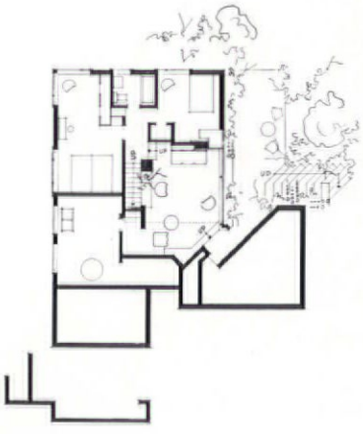


Boutel

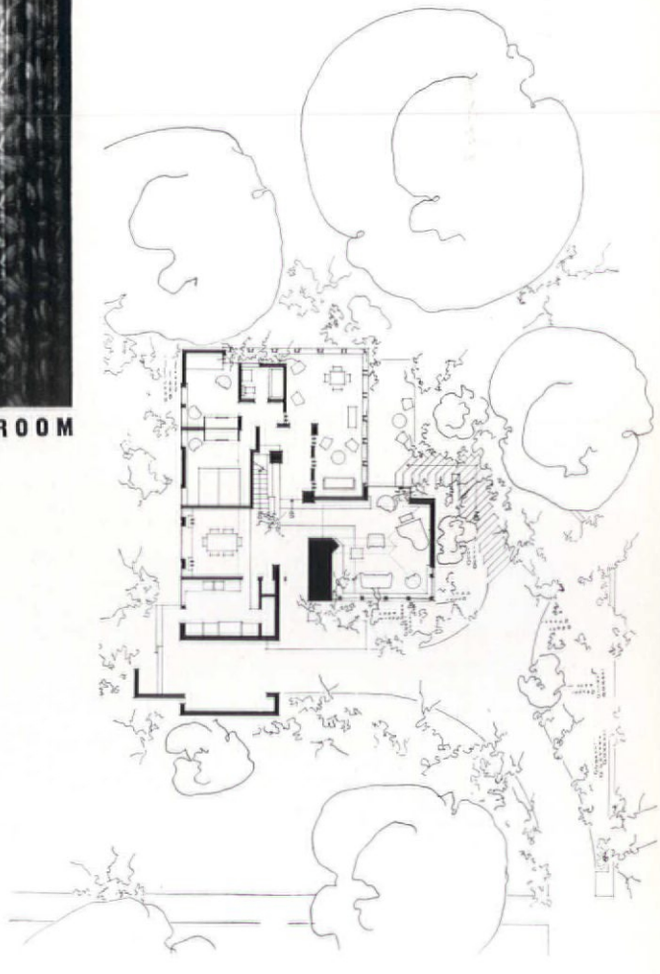
ENTRANCE

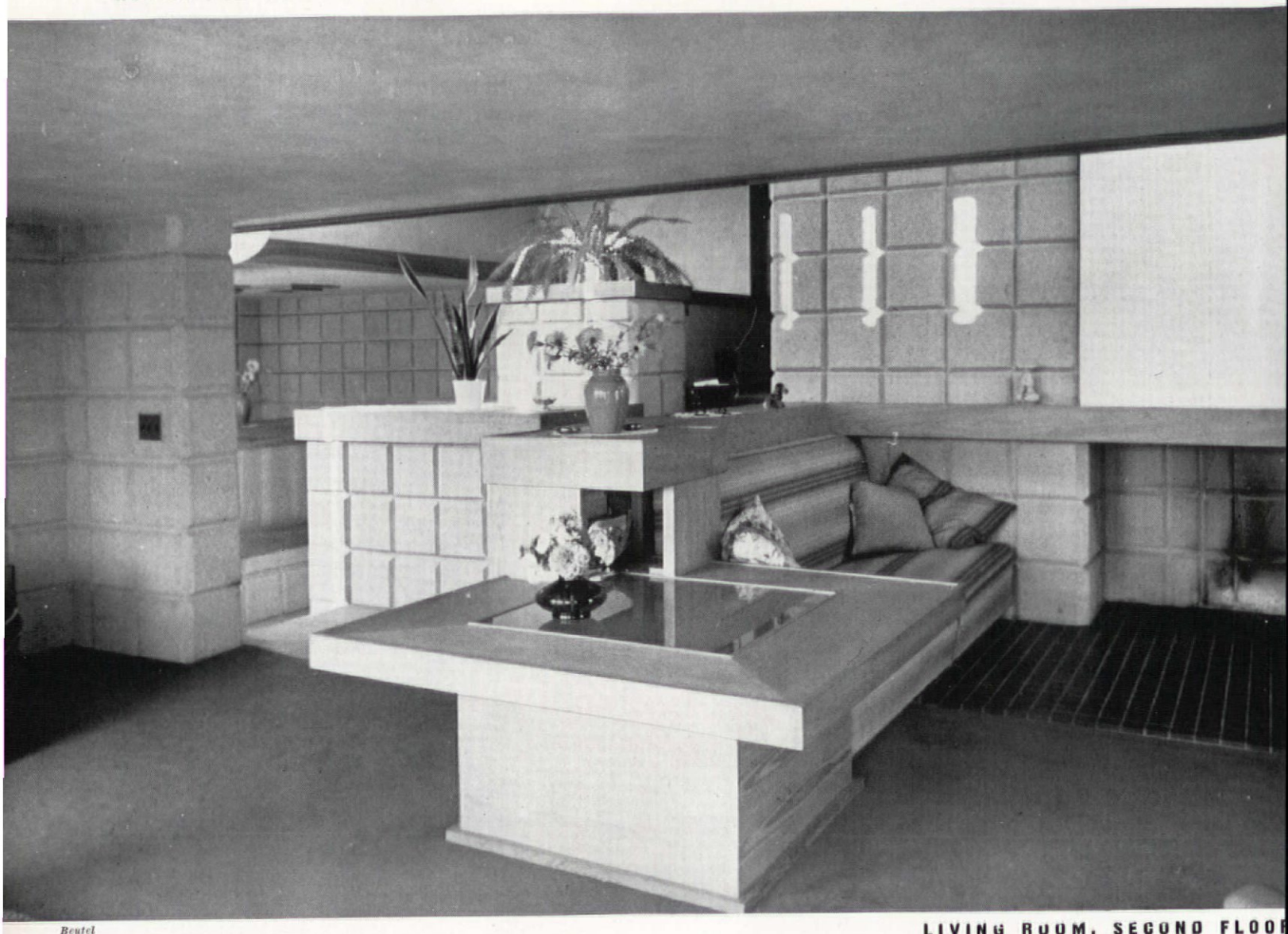


VIEW INTO LIVING ROOM



SEE PAGE 200 FOR CONSTRUCTION OUTLINE.

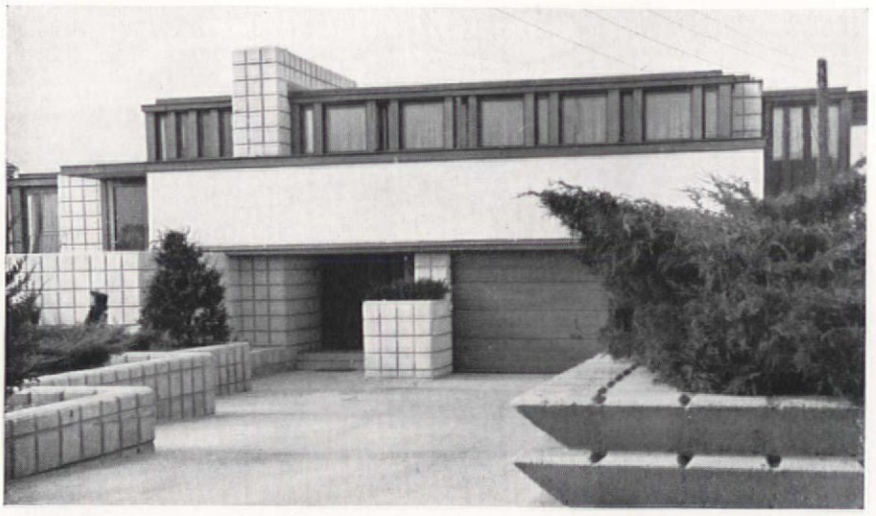




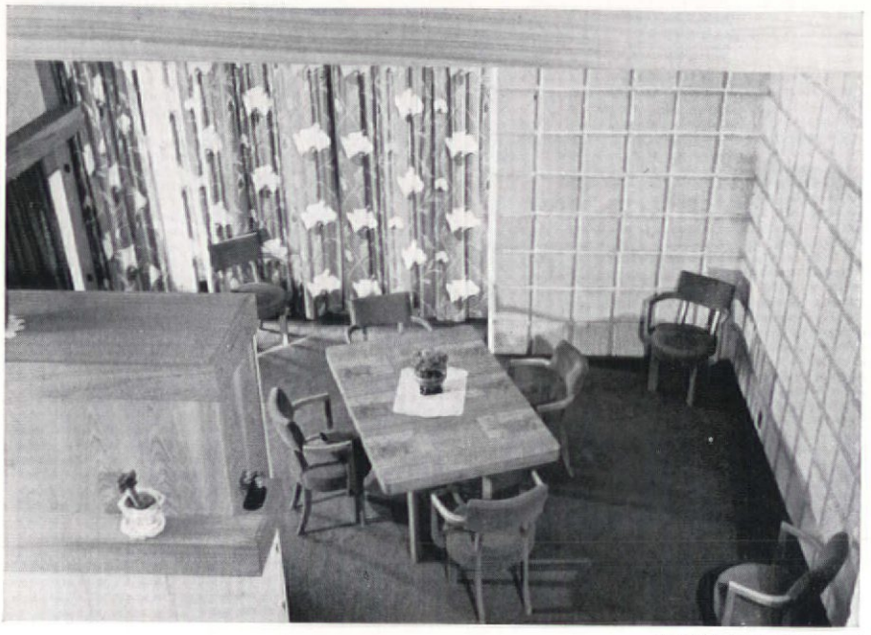
Beutel

LIVING ROOM, SECOND FLOOR

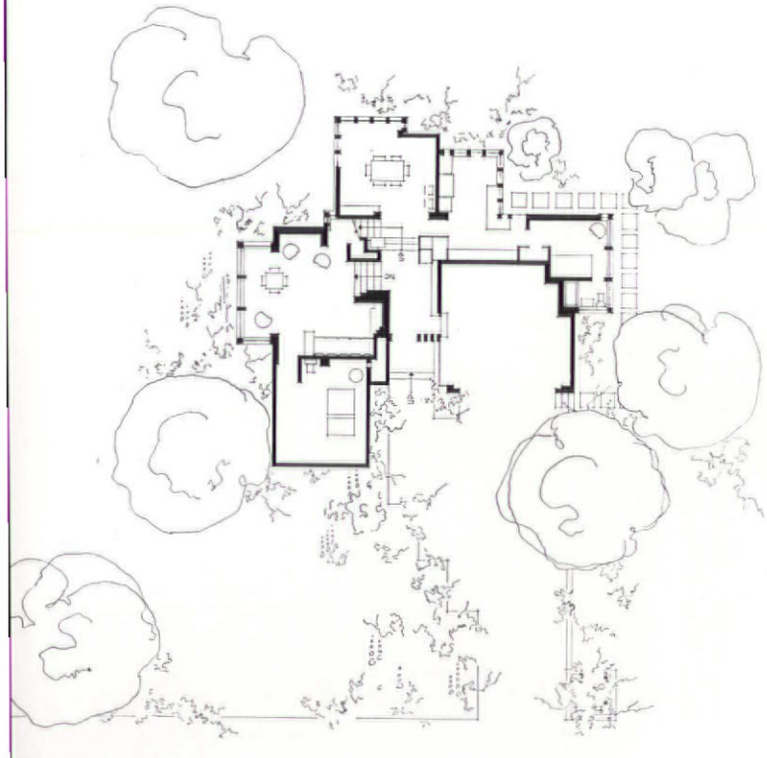
Here the open plan acts vertically as well as horizontally, with a large hall extending for a full two stories, and a dining room which is linked with it. A most attractive arrangement is the placing of a sitting room and sun deck on an intermediate level between the first and second floors, equally accessible from living rooms and bedrooms. Unit cinder blocks appear both on the interior and exterior, and are used, as in Mr. Dow's office, for flower boxes, and even furniture. Lighting fixtures in some cases are incorporated in the blocks; note the room shown above. Where wood is used, it follows the precepts of Frank Lloyd Wright, who always insisted that materials be treated in a manner which reveals their natural characteristics: hence no paint is seen on any of the wood surfaces. Cost per cubic foot, 40 cents.

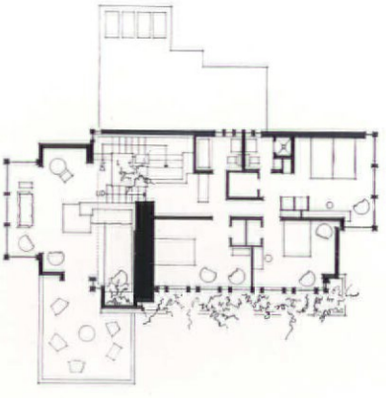


ENTRANCE SIDE



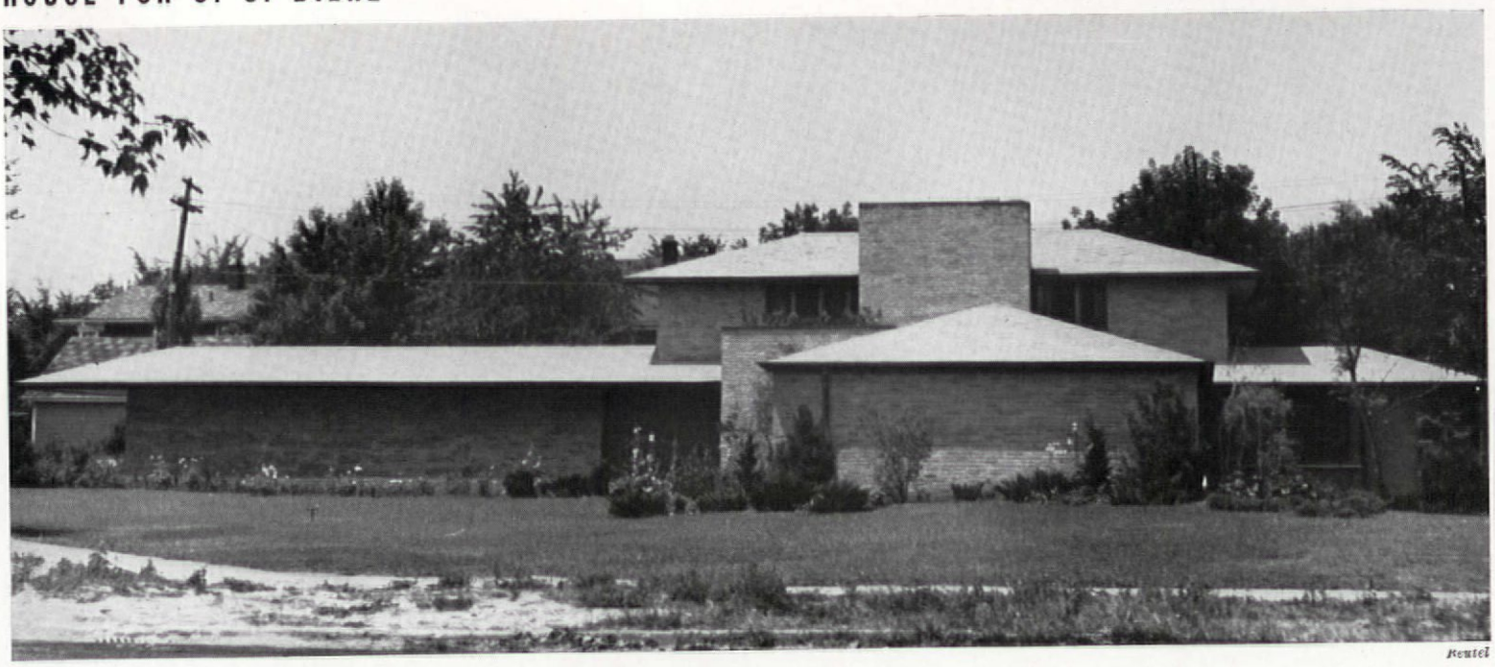
DINING ROOM



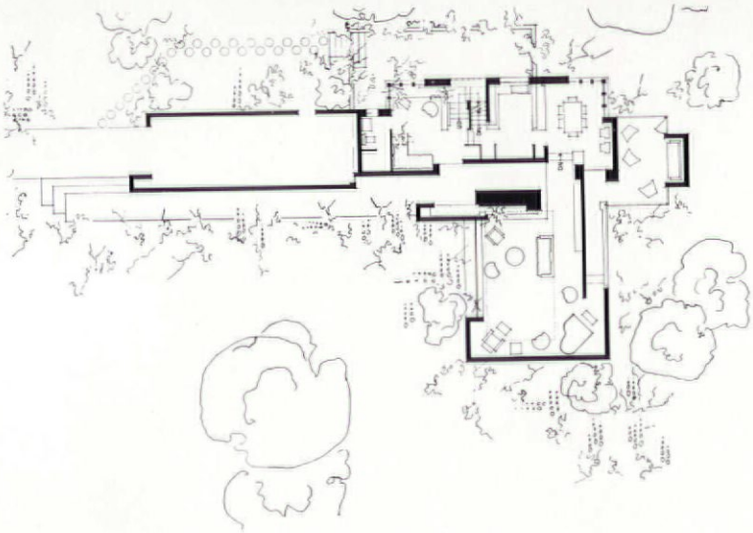


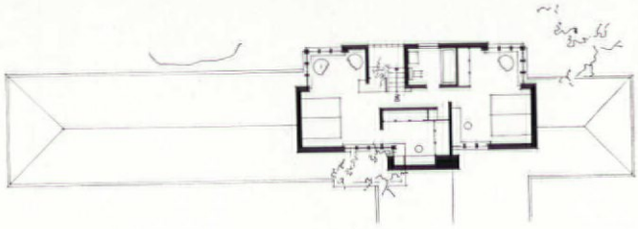
HOUSE FOR O. C. DIEHL

ALDEN B. DOW, ARCHITECT



Rentel





Built on a more restricted piece of property, the Diehl house nevertheless exhibits many of the characteristics of the preceding examples. Low roofs, a large chimney for a dominant motif, brick walls, and an open plan are the chief of these. The exterior expression of the plan is here particularly noteworthy.

CONSTRUCTION OUTLINES

DOW HOUSE (Typical for Cinder Block Construction)

FOUNDATION
Poured concrete.
STRUCTURE
Walls and exterior garden walls built of unit cinder blocks as developed by the architect. These blocks on the exterior are treated with a waterproofing compound as made by Western Waterproofing Company and finished light buff.
ROOF
Sixteen ounce copper roof with battens located four feet on center.
CHIMNEY
Constructed of unit cinder block with terra cotta flue lining.
WOODWORK
Finish trim throughout of cypress with natural finish.
HARDWARE
Schlage locks of polished brass.
PAINTING
All walls are left natural except cinder blocks which are given one coat of Magnesite paint and all interior trim is natural.
Exterior trim—2 coats of linseed oil.
ELECTRICAL INSTALLATION
All lighting is completely controlled by Rheostats operating three colors so that any color effect is possible.
HEATING
Conditioned-air direct-fired gas system by Dallaire.
EXTERIOR GARDEN TRELLIS
Wood frame construction with copper and red glass inserts. The end of this trellis develops into a lantern along the water.

CAVANAGH HOUSE (Typical for Frame Construction)

FOUNDATION
Poured concrete walls with brick finish floors laid over membrane.
STRUCTURE
Exterior walls—partly brick veneer and partly cedar siding. All exterior trim is fir.
ROOF
Covered with asbestos shingles.
WINDOWS
All casements are steel by Hope Windows, Inc. All stationary sash are built-in-place.
FLOORS
Floors are of wood with carpet for finish except hearth, hall, and stairway which are brick.
WOODWORK
Trim, cabinets, and all finish woodwork is of edge-grain fir.
HARDWARE
All hardware is buffed finish, Schlage.
PAINTING
Interior walls are left natural. Woodwork is treated with two coats of flat varnish. Exterior woodwork is stained with natural and blue stain.
ELECTRICAL INSTALLATION
All general lighting is indirect and recessed in ceilings.
KITCHEN EQUIPMENT
Sink—Kohler Co., and cabinets built to order of fir.
BATHROOM EQUIPMENT
Kohler Co., and W. A. Case & Son Mfg. Co.
PLUMBING
Soil pipe of cast iron and water supply of copper tubing.
HEATING
Conditioned air with humidified direct-fired system by Rudy Mfg. Co.

COST TECHNIQUES PART II.

. . . in which a new house is examined and priced minutely.

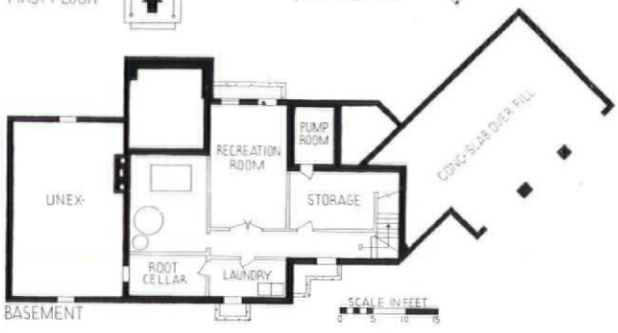
Under the heading of COST TECHNIQUES in the August issue of THE ARCHITECTURAL FORUM, several methods of cost estimating and the kinds of data used for estimating purposes were described and evaluated. This month, to show how useful cost data are derived and used for estimating purposes, a house recently built is taken as an illustration and its cost is broken down in various ways.

Cost figures should not be used in a vacuum but should be interpreted and applied in the light of conditions surrounding both the construction of the buildings from which they are derived and those of the building which is being estimated. The conditions referred to include a knowledge of the size of the building, the kind and quality of the materials, equipment, and workmanship, and such influencing factors as labor conditions and weather.

Below are plans of a recently constructed house, with pertinent information concerning its construction, its actual cost, and cost data which can be derived from this information, followed by a detailed cost estimate prepared by the In-place Unit Price method.













CONSTRUCTION OUTLINE

FOUNDATION—Walls—concrete block, dampproofed. Cellar and garage floor—4 in. concrete slab.

STRUCTURE—Exterior walls—10 in. red cedar siding, 8 in. to weather; paper, horizontal sheathing, 2 x 4 in. studs, 16 in. o. c., lath, 2 coats plaster on insulating lath except tile 4 ft. high in masters' baths.

LATH AND PLASTER—All exterior walls—½ or 1½ in. Celotex. All interior walls—⅜ in. rocklath. First floor ceiling—metal lath. Second floor—Celotex lath. Two coats Gypsum plaster throughout, 3 coats on wire lath.

ROOF—Shingles, 16 in. red cedar, 5 in. to weather.

SHEET METAL—Flashing, headers, gutters, bay window roof—16 oz. copper.

FLOORS—Second floor and master's bedroom—red oak. Service and over garage—edge grain fir, over sub-floor and over 2 x 10 in. fir joists. Conservatory—tile on concrete. Porch and terrace—flagstone. Kitchen, pantry and servant's room and baths—linoleum. Tile in masters' baths.

INSULATION—Exterior walls: Master's portion—Celotex lath. Service portion—4 in. rockwool and 1½ in. Celotex (as plaster base). Second floor ceilings—Ferrotherm.

KITCHEN EQUIPMENT—Wood cabinets of stock manufacture.

WINDOWS—All double hung, Silentite, Curtis Companies, Inc.; all casements—Sears, Roebuck & Co.

WOODWORK—Master's portion—Curtis No. 5207 and 5935 painted pine. Service portion—plain fir.

HARDWARE—Steel butts, brass knobs, P. & F. Corbin.

PAINTING—Plaster throughout, Muresco, except kitchen and baths, 3 coats enamel. Woodwork—3 coats enamel. Floors—2 coats Minwax and 1 coat wax. Exterior—3 coats lead and oil.

LAUNDRY EQUIPMENT—Double enameled tray only.

BATHROOM FIXTURES—Baths, 1 and 2 and lavatory—colored, acid resistant, Crane Co. Baths, 3 and 4—Sears Roebuck & Co.

HEATING—Lennox forced hot air, two thermostats.

GENERAL CONDITIONS

LOCATION—Suburban Area about 60 mi. from N. Y.

BUILT—Spring and Summer 1936 by General Contractor.

LABOR—Open Shop—Small subcontr., many working themselves.

QUALITY—Workmanship, fair—Materials, good.

SIZE—13 Rooms; Area: 5,180 sq. ft.; Volume: 58,150 cu. ft.

COST—$18,885, $3.65 per sq. ft.; $.325 per cu. ft.

CALCULATION OF FLOOR AREA AND CUBE

IDENTIFICATION	DIMENSION	AREA	AREA FACTOR	HEIGHT	FL. AREA SQ. FT.	VOLUME CU. FT.
Main House A	43 x 29	1247	2	22	2494	27,434
Connection B	21 x 16	336	1	14	336	4,704
2nd fl. of B	18 x 7	126	1	..	126	...
Garage Wing C	30 x 21	630	1	22	630	13,860
2nd fl. of C	30 x 19	570	1	..	570	...
Conservatory	3 x 13	39	2	20	78	780
Glass Ext.	6 x 12	72	1	12	72	864
Din. Ext. incl. Bay	3½ x 13	45	1	12	45	540
Entrance Porch	8 x 6	48	½	11	24	528
Terrace	10 x 12	120	½	..	60	...
Basement						
Recreation Room	12 x 20	240	½	..	120	...
Open	17½ x 29	507½	..	4	...	2,030
Unfinished	26 x 32 - (13 x 8)	728				
	13 x 12	156		8	...	7,408
	7 x 6	42				
Attic	43 x 29	1247	½		624	...
					5,179	58,148

BREAKDOWN BY TRADES

	COST*	PERCENTAGE	COST PER CU. FT.
EXCAVATION	$ 320	1.7	$ .006
FOUNDATION AND CONCRETE	1,090	5.8	.019
MASONRY, BRICK AND STONE	520	2.7	.009
CARPENTRY LABOR	2,100	11.1	.036
ROUGH LUMBER, FLOORING	1,650	8.7	.028
INSULATION	300	1.6	.005
EXTERIOR, CLAPBOARDS, SHINGLES	990	5.2	.017
MILLWORK AND STAIRS	2,770	14.7	.048
LATH AND PLASTER	1,400	7.4	.024
SHEET METAL	280	1.5	.005
PLUMBING	1,725	9.2	.029
HEATING	1,675	8.9	.029
ELECTRICAL	268	1.4	.005
TILES AND LINOLEUM	760	4.0	.013
HARDWARE	220	1.2	.004
WROUGHT IRON	110	.6	.002
PAINTING	990	5.2	.017
SUBTOTAL	17,168		
OVERHEAD AND PROFIT	1,717	9.1	.029
TOTAL	18,885	100.0	$ .325

*Actual cost.

IN-PLACE UNIT PRICE METHOD OF ESTIMATING

In order to explain this method the house shown here has been used as an example. Quantities, as required, have been taken from these plans and unit prices consistent with the known costs have been used. Each step is described in detail and the figures are assembled on a worksheet.

In this method, to simplify the work of measurement and calculation, the usual trade breakdown is somewhat varied. Certain items which can be related to a common area or quantity are grouped together. Examples of this are a floor with the ceiling below it and all the construction between the two, a door with its frame, trim, and hardware. A number of small items are entirely omitted but are compensated for by quantity allowances in other items or a slight increase in certain unit prices. For example, nails and other rough hardware are not figured but their cost is taken up in the quantities of lumber or masonry used; instead of counting in fireplace dampers and flue linings, chimneys and fireplaces are figured as though they were solid masonry. Measurements are usually taken to the nearest half foot.

Wherever applicable, unit in-place prices are used. These prices are made up of the cost of any item of material or equipment, plus the labor of putting it in place in the building, plus the subcontractor's overhead and profit.

A valuable time saver is the use of factors as an aid in calculating the amount of material in a particular construction having a unit surface area. The factors given below indicate the quantity of the material mentioned, including allowances for waste and incidental items, in a square foot of construction.

FACTORS

FOUNDATION WALLS

	Brick	Concrete
4 in. thick	7 brk.	.33 cu. ft.
6 " "		.50 " "
8 " "	14 "	.67 " "
10 " "		.83 " "
12 " "	21 "	1.00 " "

FLOORS AND CEILINGS (Wood Frame Construction)

a. Floor Factors

The factors for joists include the joists, wall sills, girders, bridging, rough hardware, and waste. The factors for sub-floor and finished floor include waste and nails.

Joists	16 in. on center	20 in. on center
2 x 12s	2.6	2.2
2 x 10s	2.2	1.9
2 x 8s	1.8	1.6

Sub-floor	Right Angle	Diagonal
1 x 6s 8s S S	1.2	1.3
1 x 6s 8s T G	1.3	1.4
Finished Floor	2¼ in. Face	3¼ in. Face
Pine or oak	1.4	1.3

b. Ceiling Factors (no floor above)

Figured the same as floor factors but without girders.

Joists	16 in. on center	20 in. on center
2 x 10s	1.5	1.2
2 x 8s	1.2	1.0
2 x 6s	1.0	.8

Ceiling 3¾ in. face	1.3
Insulating boards	1.1

ROOFS

Roof factors take into account rafters, ridge, and wind braces.

Rafters	16. in on center	20 in. on center
2 x 10s	1.7	1.4
2 x 8s	1.4	1.1
2 x 6s	1.0	.9

EXTERIOR WALLS

The factors for exterior frame wall construction include studs, shoes, plates, sills, jambs and doubling and trussing for window and door openings, and, of course, loss in dressing, lapping, and job cutting.

	Factors
Studs 2 x 4s—16 in. on center	1.4
" 2 x 6s—16 in. " "	2.0
Siding 1 in. x 6 in.—4½ in. to weather	1.4
" 1 in. x 8 in.—6 in. " "	1.4
" 1 in. x 10 in.—8 in. " "	1.3
Base and picture mold	.11
4 in. brick veneer	7 brk.

PARTITIONS

The factors for framing are the same as for Exterior Walls. Factors for wall finish and trim should be doubled to account for both sides.

1. EXCAVATION

Separate into bulk and trench excavation, the latter costing more. Measure bulk excavation to one foot beyond walls on all sides and trench excavation approximately one foot wider and longer (to nearest half foot) than walls. This will take care of footing excavation and back fill.

Bulk	336 c.y. @ .50	= $168	
Trench	50 c.y. @ 1.	= $ 50	
Rock—allow	25 c.y. @ 4.	= $100	
		$318	$ 318

2. FOUNDATIONS AND CHIMNEYS

a. FOUNDATIONS: Measure height of walls from bottom of footing to bottom of wall sill or floor slab. Walls of different thicknesses are best priced separately, particularly when some may be waterproofed or forms are used. Disregard additional width of wall footings. Do not deduct openings nor figure in here or elsewhere exterior cellar doors or windows as these will about balance. Piers and miscellaneous footings may be lumped together as so many cubic feet.

b. CHIMNEYS: Figure their volume as though they were solid. This excess quantity will about balance hearth slab, flue lining, fire brick inner hearth and backing, damper, chimney cap, and any other small items, which are not, therefore, to be separately priced. An allowance has been added for special facings at fireplaces.

c. For convenience and comparison, concrete floors and stonework have been included under this heading, although they more properly belong with Floors and Walls.

12 in. Block	1,730 s.f. @ .27*	= $ 467	
8 in. "	830 s.f. @ .25	= $ 208	
6 in. Concr. (areas)	170 s.f. @ .23	= $ 39	
4 in. Concr. Floors & Fill	2,180 s.f. @ .21	= $ 458	
Chimney	550 c.f. x 21 br. @ .035	= $ 404	
2 Fireplaces @ $100		= $ 200	
Stone Wall	75 s.f. @ 1.	= $ 75	
Flagging	174 s.f. @ .50	= $ 87	
		$1,938	$ 1,938

*

Block	.14
Mortar	.03
Labor	.08
Dampproofing	.02
	.27

3. FLOORS AND CEILINGS

In this item is included the entire floor construction with ceilings, paint, and floor finishing. Unit prices for the entire floor construction or any part of it are built up as shown. Ceilings may be included with the floors immediately above or below them as long as they have the same area. The square foot of floor area is the unit used and measurements are taken to the outside of exterior walls or partitions. The same dimensions as used for calculating floor area may usually be used.

Main House*			
1st Fl. incl. ceiling above	1,440 s.f. @ .611	= $ 880	
2d " " " "	1,280 s.f. @ .631	= $ 808	
Attic	1,280 s.f. @ .199	= $ 255	
Garage Wing**			
Kit. & Pntry.	320 s.f. @ .396	= $ 127	
2d Fl. incl. ceiling below	630 s.f. @ .638	= $ 402	
2d " ceiling	540 s.f. @ .244	= $ 132	
Recreation Room	230 s.f. @ .30	= $ 69	
Linoleum	300 s.f. @ .30	= $ 90	
Conservatory Tile	100 s.f. @ 1.00	= $ 100	
		$2,863	$2,863

*MAIN HOUSE

1ST FLOOR AND CEILING ABOVE

	(factor)	
2 x 10s 16in. o.c.	2.2	x .058 - .127
1 x 6 sub fl.	1.2	x .052 - .062
Oak floor	1.4	x .155 - .217
Scrape and finish		.075
Wire lath		.04
Plaster		.07
Paint		.02
		.611

2D FLOOR AND CEILING ABOVE

	(factor)	
2 x 10s 16in. o.c.	2.2	x .058 - .127
1 x 6 sub fl.	1.2	x .052 - .062
Oak floor	1.4	x .155 - .217
Scrape and finish		.075
Celotex lath		.060
Plaster		.07
Paint		.02
		.631

ATTIC

	(factor)	
2 x 10s 16in. o.c.	1.5	x .058 - .087
1 x 6 sub fl.	1.2	x .052 - .062
Insulation		.05
		.199

**GARAGE WING

KITCHEN AND PANTRY

	(factor)	
2 x 8s 16in. o.c.	1.8	x .058 - .104
1 x 6s sub fl.	1.2	x .052 - .062
Fir. Finish floor	1.4	x .15 - .210
Scrape		.02
		.396

GARAGE WING AND CEILING BELOW

	(factor)	
2 x 12s 16in. o.c.	2.6	x .058 - .151
1 x 6 sub fl.		.062
Fir finish floor		.210
Scrape and finish		.075
Wire lath		.040
Cement plaster		.100
		.638

GARAGE WING—CEILING

	(factor)	
2 x 4s 16in. o.c.	.8	x .058 - .046
Insulation		.050
Celotex lath		.058
Plaster		.070
Paint		.020
		.244

4. ROOFS AND SHEET METAL

In measuring roof area consider the triangular part of connecting roofs and roofs over dormer windows as balancing the openings occasioned by them. Hence these areas need not be calculated nor the openings deducted. The unit pricing for gutters, leaders, etc., is usually the lineal foot; for framing and roofing, the square foot.

Main House			
2 x 8s 16 in. o.c. 1.4 x .058	= .081		
Shingles	.095		
	.176	x 1,780 s.f.	= $313
Garage Wing			
2 x 6s 16 in. o.c. 1.0 x .058	= .058		
Shingles	.095		
	.153	x 1,210 s.f.	= $185
Gutters	.80	x 88 l.f.	= $ 70
Leaders	.50	x 72 l.f.	= $ 36
Flashing and Miscellaneous			$100
			$704 $ 704

5. EXTERIOR WALLS

Measure height of exterior walls from top of foundation through to top of roof. This additional height balances cornice. Do not deduct window or door openings unless these are very large, such as garage doors. Unit prices are built up in the same manner as Floors.

2 x 4s 16 in. o.c.	1.4 x .058 =	.081	
Sheathing	1.2 x .052 =	.062	
Paper		.015	
Siding	1.3 x .116 =	.151	
Lath—Celotex		.058	
Plaster		.07	
Base & Picture Mold.	.11 x .11 =	.012	
Paint—inside and out		.06	
		.509 x 2,600 =	$1,323
Garage—add for insulation		.18	
		.693 x 1,380 =	$ 956
			$2,279

$ 2,279

6. PARTITIONS

Measure height from floor to ceiling and length to outside of exterior walls or across partitions. Do not deduct for door or cased openings.

2 x 4s		.081	Cellar	
Lath-Rock	2 x .048 =	.096	.081	
Plaster	2 x .07 =	.140	.16	
Base, Pict. Mold.	.22 x .11 =	.024	.24 x 620 =	$149
Paint	2 x .03 =	.06		
		.401 x 2,400 =		$962
Tile	200 s.f. @ .90 — .07 =			$166
				$1,277

$ 1,277

7. MILLWORK, DOORS, WINDOWS, ETC.

Build up costs of doors, windows, and similar items as shown. If base and picture molding have been figured in exterior walls and partitions (see factors) do not include here. Stairs, shown here as a lump sum item, may be figured from a unit price per lineal foot of tread.

*DOORS—MASTERS'	
Door	$10.20
Jamb	$ 1.80
Trim	$ 1.60
Hrdw.	$ 3.50
Labor	$ 5.50
	$22.60

**DOORS—SERVICE	
Door	$ 2.85
Jamb	$ .90
Trim	$ 1.00
Hrdw.	$ 2.00
Labor	$ 5.00
	$11.75

Doors			
Interior—Masters'	17 @ $22.60* =	$ 384	
Service	23 @ $11.75** =	$ 270	
Exterior—Entr. compl.		$ 200	
Others	4 @ $50 =	$ 200	
Garage	3 @ $80 =	$ 240	
Windows			
Complete	45 @ $21 =	$ 945	
Spec. conservatory encl.		$ 400	
Louvers	4 @ $15. =	$ 60	
Kitchen cabinets		$ 300	
Dining Room cabinets, bookcases, etc.		$ 300	
Entrance porch		$ 120	
Stairs		$ 600	
		$4,019	

$ 4,019

8. PLUMBING

May be approximated on a fixture basis (count hot water tank as a fixture) or use a lump sum estimate. Include in plumbing all bathroom equipment, such as medicine cabinets, accessories, etc. This total will usually be about 10 per cent of the total construction cost.

16 Fixtures @ $120 = $1,920

$ 1,920

9. HEATING

May be approximated from the number of square feet of radiation as a unit, or use a lump sum. Add special equipment, such as oil burner.

Heating	$1,400
Oil Burner	$ 350
	$1,750

$ 1,750

10. ELECTRICAL WORK

Usually estimated with the outlet as a unit. Count as outlets fixture and convenience outlets, switches, radio outlets, telephone outlets, etc. Count power outlets and fuse boxes double and service switch as three outlets. Add lighting fixtures, if part of contract. (In the example they were not included in the specifications but were bought separately by the owner.)

128 Outlets @ $2.25 = $288

$ 288

$17,356

OVERHEAD AND PROFIT 10 PER CENT $ 1,736

TOTAL ESTIMATED CONSTRUCTION COST $19,092

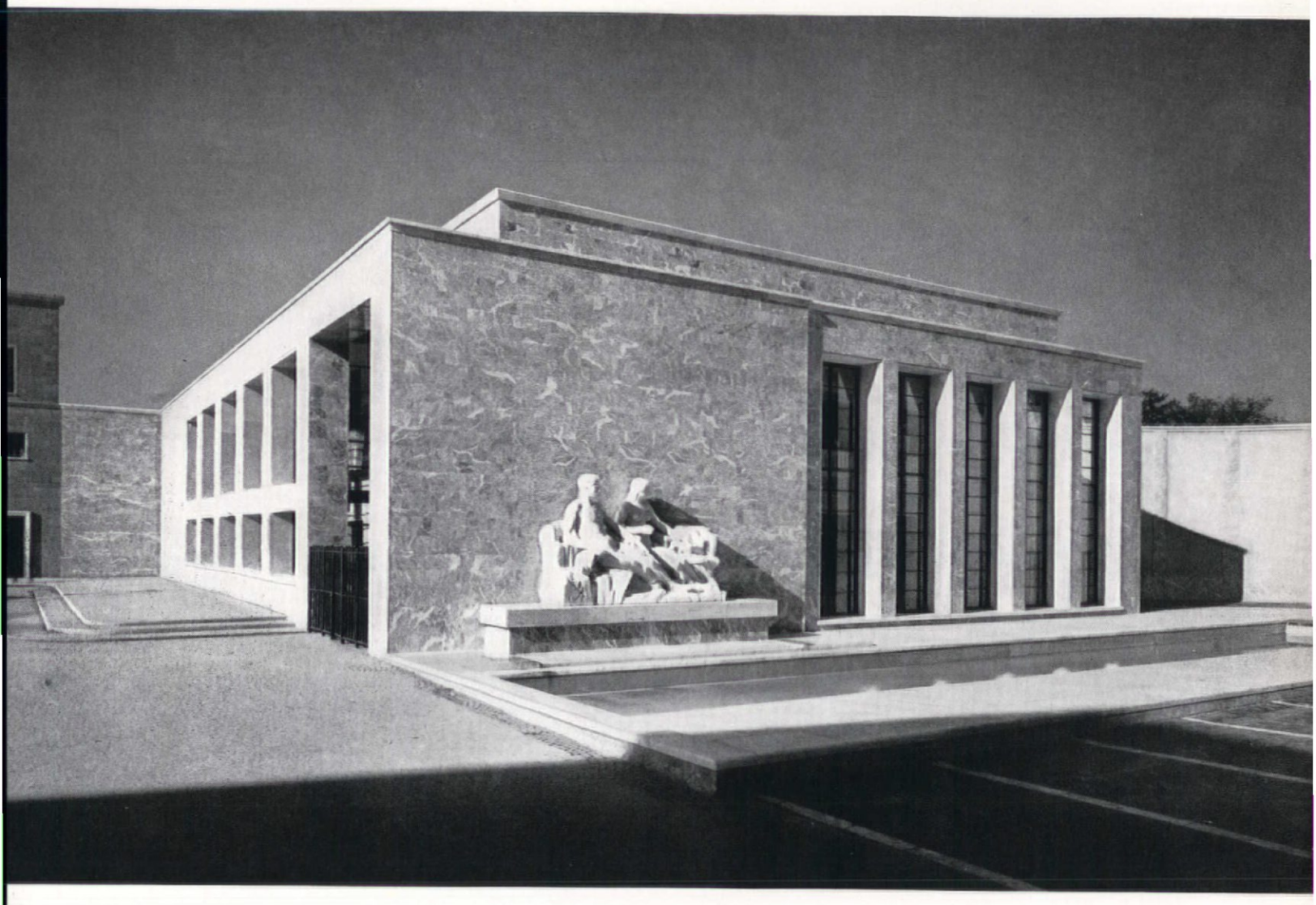
CONCLUSION

The estimated cost determined by the In-place Unit Price Method is very close to the actual cost, although many items have apparently not been included. The use of factors and increased dimensions make the inclusion of such items in the estimate unnecessary. It must be remembered that this is a method of approximation, not of precision. Attempts at precision would tend to render the result less accurate. It must also be remembered that the costs under the major headings cannot be compared with the trade breakdown since the grouping of items under the headings is not the same in the two cases. For example, plumbing in the In-place Unit method includes medicine cabinets and bathroom accessories.

Since price is invariably a factor in the selection of materials, the in-place unit price is definitely a quality of a material to be considered in arriving at any decision regarding its use.

With unit prices obtained and quantities listed it will be easy to estimate changes in cost due to changes in plan or materials. If records are kept of the make-up of the unit prices it will not be necessary to repeat the work of building up and calculating the unit costs for each estimate. With the unit prices once in hand the actual work of preparing an estimate is not very great.

RAILWAY STATION, FLORENCE, ITALY



GIOVANNI MICHELUCCI, NELLO BARONI, PIER NICCOLÒ BERARDI, ITALO GAMBERINI, SARRE GUARNIERI, LEONARDO LUSANNA, ARCHITECTS.

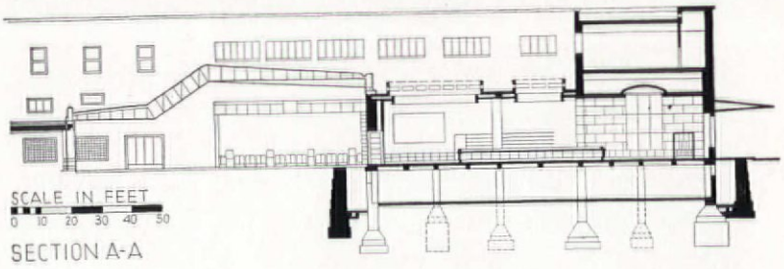
Because it is the direct product of an open competition and because it so admirably fulfills its obligation of public service, this railway station in Florence, Italy, is positive evidence of the vitality in contemporary architecture.

The competition which produced this building was notable, not only for the number of entries and the variety of designs, but for the remarkable interest displayed by a public which has never been indifferent to such matters. That the station was to be the gateway to one of the great centers of Western art, with the magnificent church of Santa Maria Novella only a street's width away, sufficiently explains the keenly critical attention given it. When the awards were published, and it was learned that the jury had not only premiated a modern design, but had thrown out all projects which recalled a past other than Fascist, there was a furor, and denunciations of the "glass coffin." So great was the uproar, finally, that Mussolini himself had to back up the nervous winners, assuring them that "the Florentines would like the building." Whether this was a prediction or an order is not quite clear, but that the Florentines do like their new station cannot be questioned.

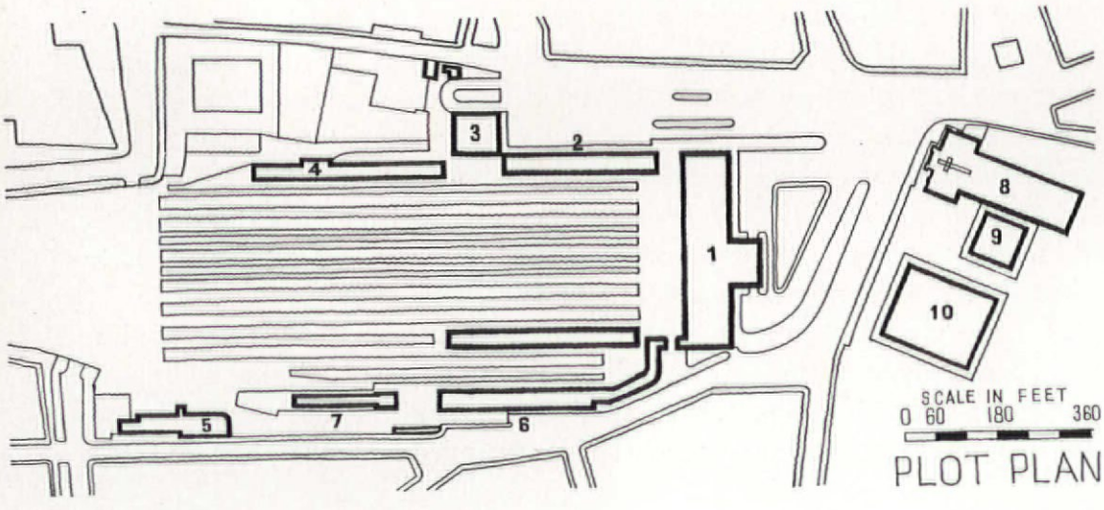
Less shocking in stone than on paper, the "glass coffin" fits into its place with assurance. It is low and unobtrusive, and for all its modernity has something of the quality of its ancient neighbors. Its use of fine marbles continues a tradition as old as Italian architecture. And its plan works. Honest design, unforced monumentality, and a powerful expression of a new spirit appear in this building. Italy has not forgotten how to build in the grand manner.

RAILWAY STATION, FLORENCE, ITALY





SECTION A-A



PLOT PLAN

1. STATION PROPER
2. POST OFFICE
3. ROYAL PAVILION
4. RAILROAD COMPANY OFFICES
5. EMPLOYE'S QUARTERS
6. BAGGAGE STORAGE
7. EXPRESS STORAGE
8. CHURCH OF SANTA MARIA NOVELLA
9. CLOISTER OF SANTA MARIA NOVELLA
10. GREAT CLOISTER



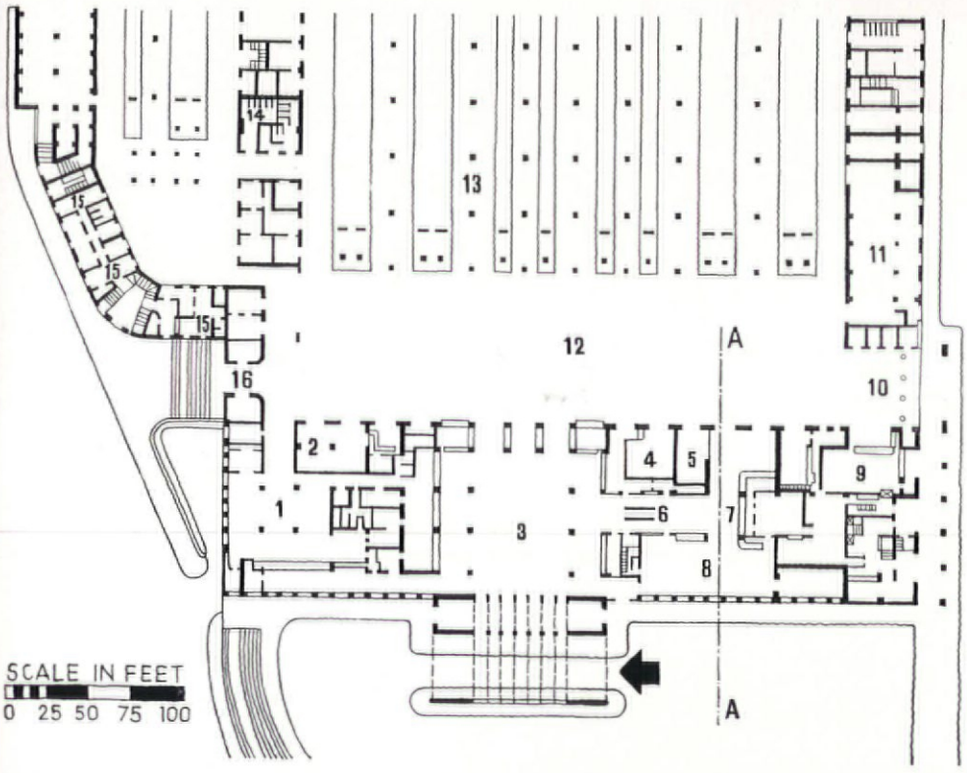
THIRD CLASS WAITING ROOM



FIRST CLASS WAITING ROOM



MAIN LOBBY



1. OUTGOING BAGGAGE
2. 3D CLASS WAITING ROOM
3. MAIN LOBBY
4. 1ST CLASS WAITING ROOM
5. 2D CLASS WAITING ROOM
6. TIME TABLE INFORMATION
7. 1ST AND 2D CLASS BAR
8. 1ST AND 2D CLASS RESTAURANT
9. CHECK ROOM
10. EXIT
11. INCOMING BAGGAGE
12. ENTRANCE TO TRACKS
13. TRACKS AND PLATFORMS
14. TOILET
15. BARBER SHOP, BATHS, ETC.
16. EXIT

ENTRANCE HALL



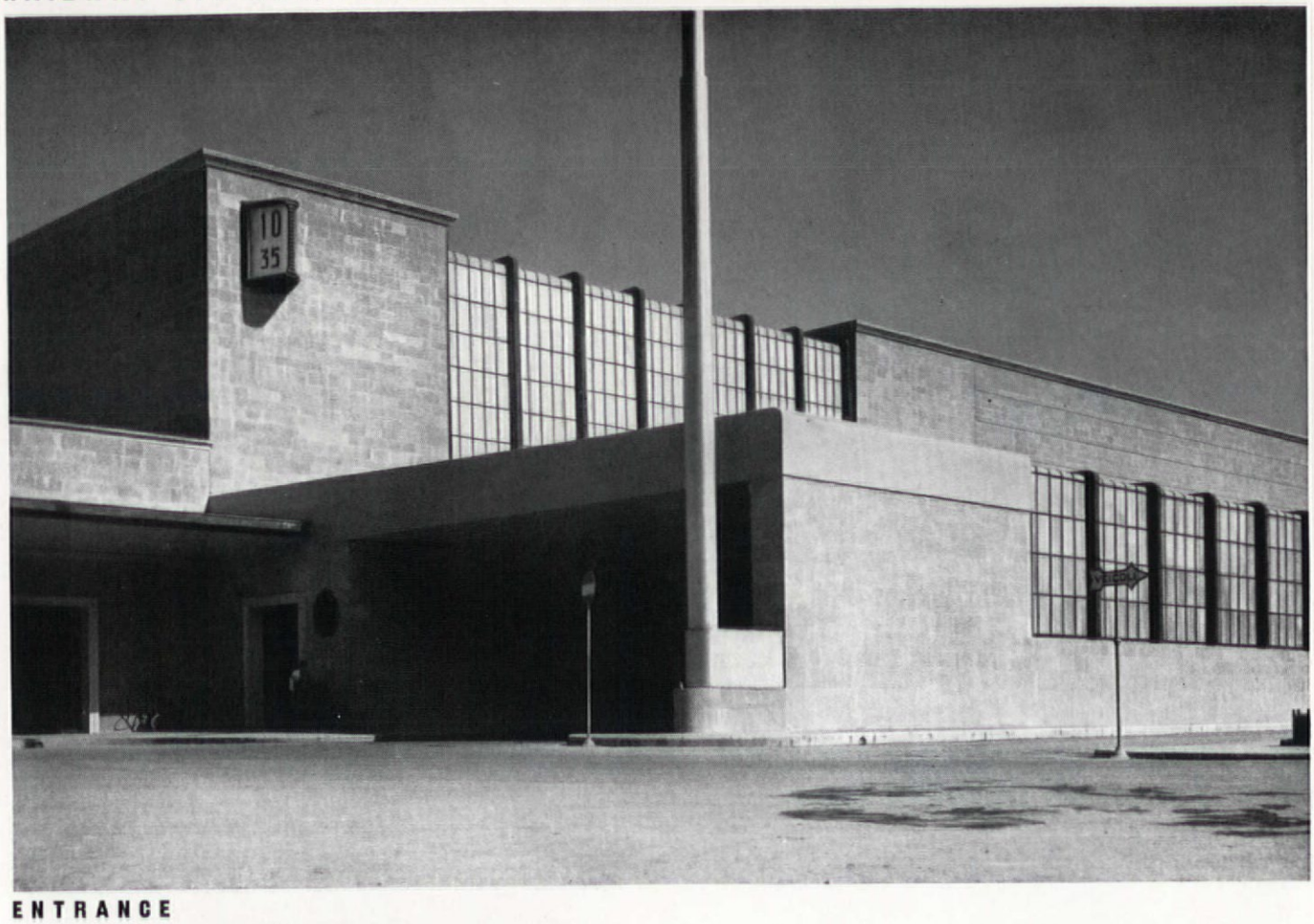
TICKET WINDOWS



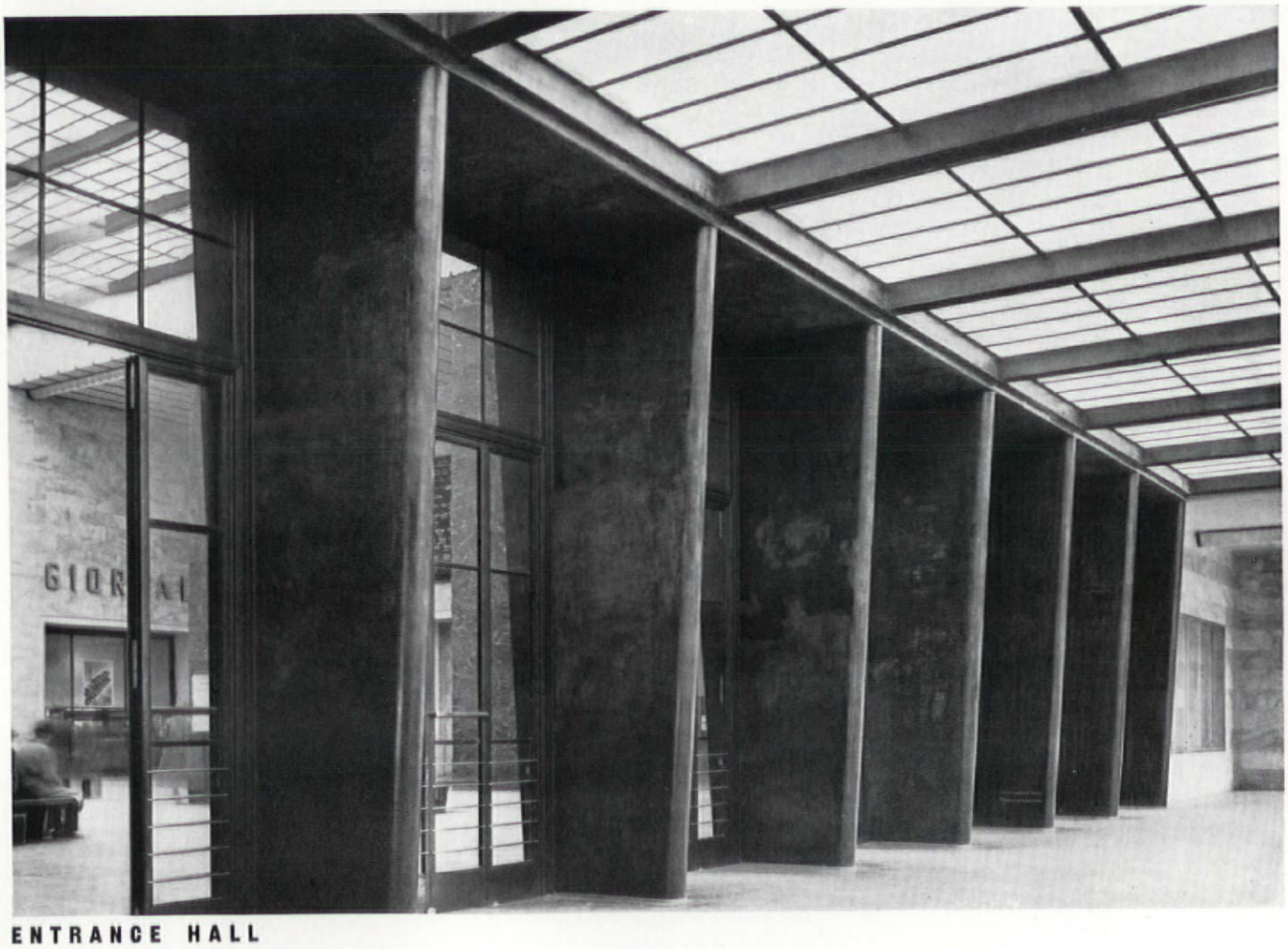
SIDE EXIT



RAILWAY STATION, FLORENCE, ITALY



ENTRANCE



ENTRANCE HALL



ENTRANCE TO TRACKS

The air view and plan on the preceding pages show the attention given to vehicular traffic. A large space in front allows unimpeded circulation of automobiles and carriages, and at the same time creates a setting whose simplicity is well in keeping with the character of the station. Over the main entrance there is a new version of the conventional porte-cochère, large enough to shelter a number of cars at once. The main feature of the facade is the great screen of glass which begins with the wall of the shelter and continues up over the facade of the station, finally to become a skylight. Hence the epithet "glass coffin." The practical difficulties were met by the use of "Thermolux," a heat-retarding glass, and by the construction of a double glass wall for further insulation. The masonry used is for the most part local stone, similar to that used in older buildings in Florence; marble and travertine are used on the Royal Pavilion and for most of the interiors.

RAILWAY STATION, FLORENCE, ITALY





TRAIN PLATFORMS

SIDE ENTRANCE



The interesting combination of traditional native materials and modern design is best seen in the interiors. Any coldness that might result from the uncompromising rectangularity of the building is more than counterbalanced by the richness of the wall coverings. In the photograph above a more utilitarian character is stressed, with the roof supports and lighting equipment admirably placed for unobtrusive appearance and convenience.

RAILWAY STATION, FLORENCE, ITALY





The Royal Pavilion, an incongruous genuflection to a past day, is to be found in all large stations in Italy. Here treated as a semi-detached building, it is spacious, rich in materials and decoration. Characteristic of this treatment is the facade with Italo Griselli's sculptured group (page 205) and the handling of these interiors.

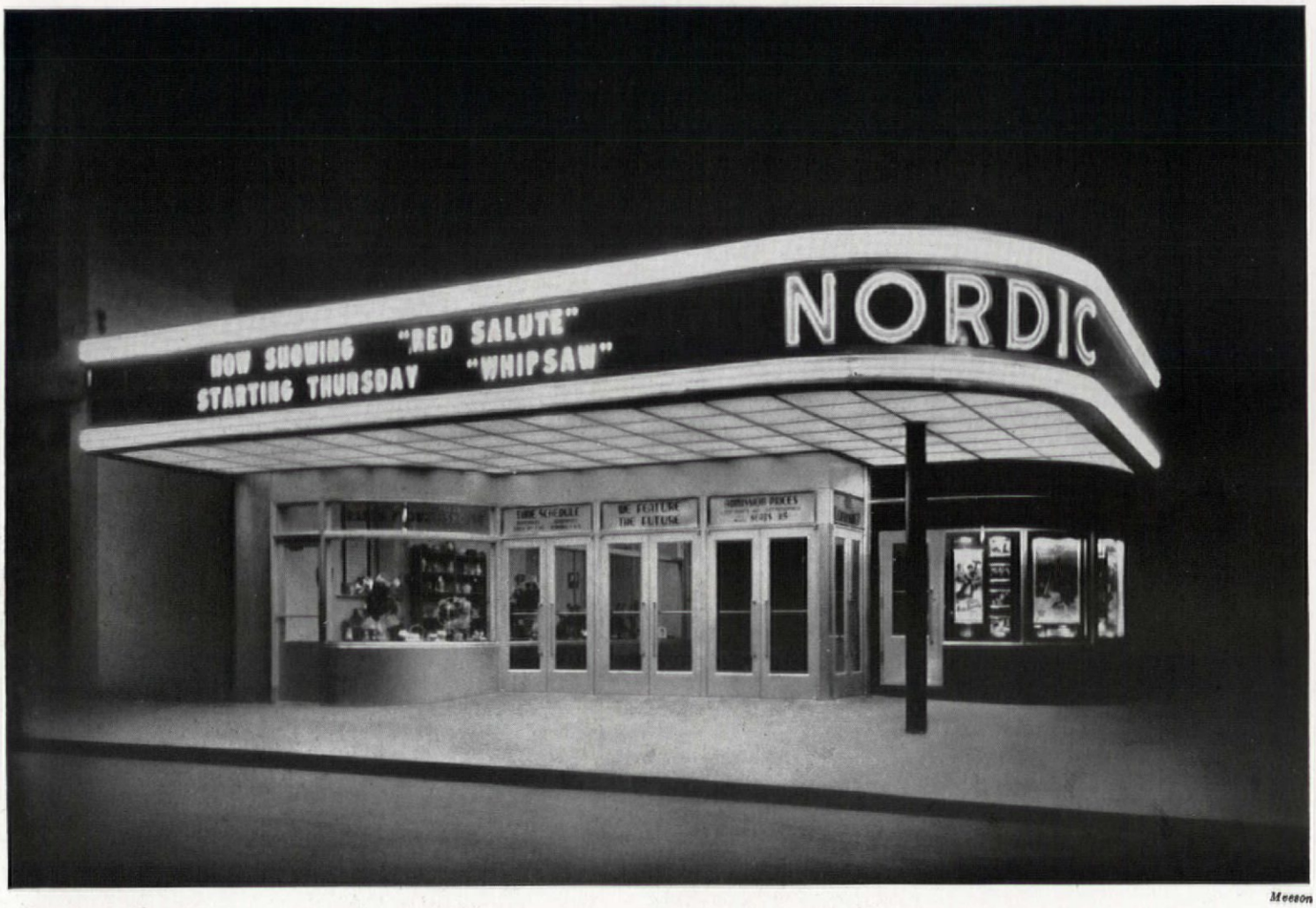
THE ROYAL PAVILION



CONTEMPORARY BUILDING



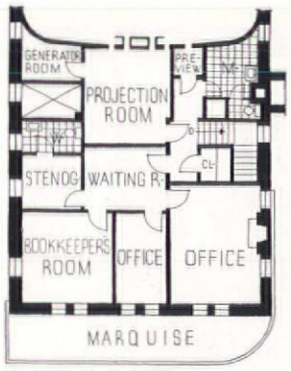
MOTION PICTURE THEATER, MARQUETTE, MICHIGAN



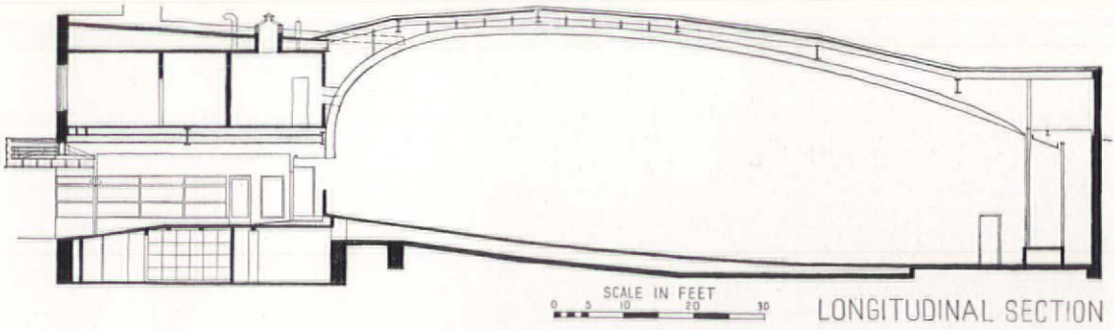
Meeson

MICHAEL M. HARE, DESIGNER

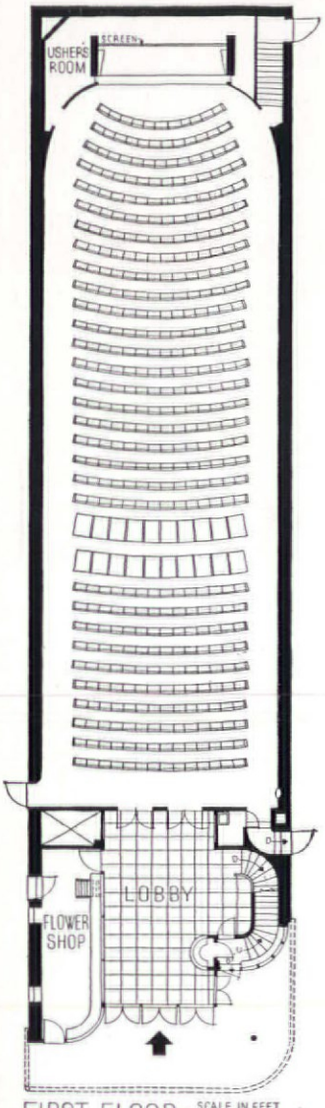
Its highly imaginative use of light and the unusual design of its auditorium are two features which distinguish the Nordic Theater. Small, with a seating capacity of only 452 persons, it exhibits a kind of thinking and an attention to detail that is not always found in larger work. The auditorium, shaped like a flattened egg, was designed to focus attention on the screen, avoiding the restless ornament which has no place in a room of this kind, and its only decoration consists of the small squares of the acoustic ceiling. A strip which runs down the center of the ceiling contains the supply duct outlets and two rows of lights. These lights, and the two rows at the sides, are connected with an elaborate master switchboard, by means of which literally thousands of color combinations can be produced. The aisle lights, set beneath the handrails, are a useful and attractive innovation. Much of the furniture



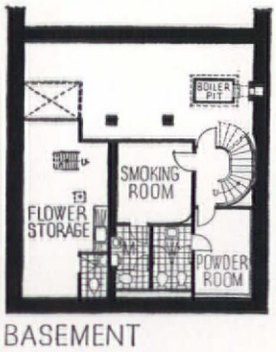
SECOND FLOOR



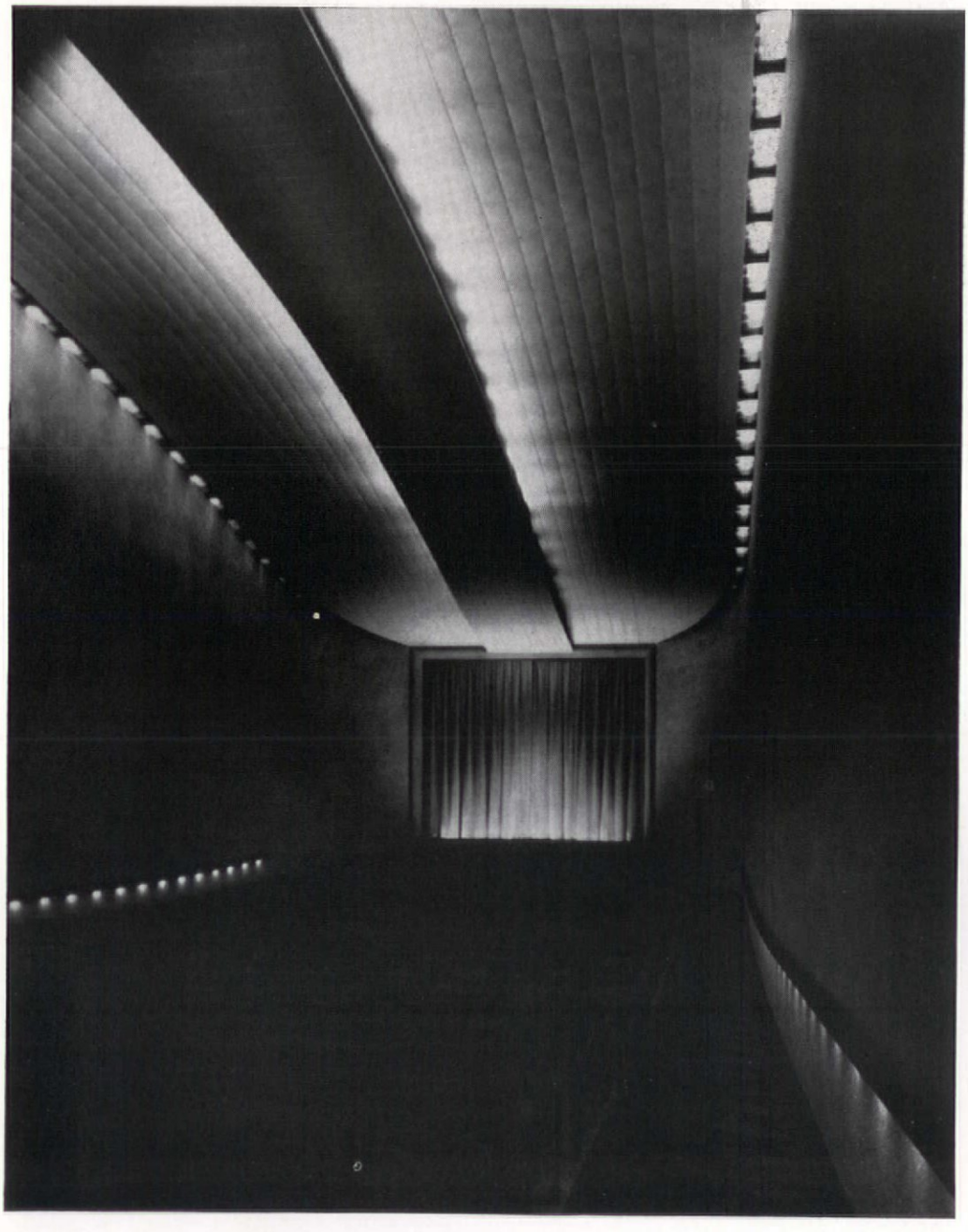
LONGITUDINAL SECTION

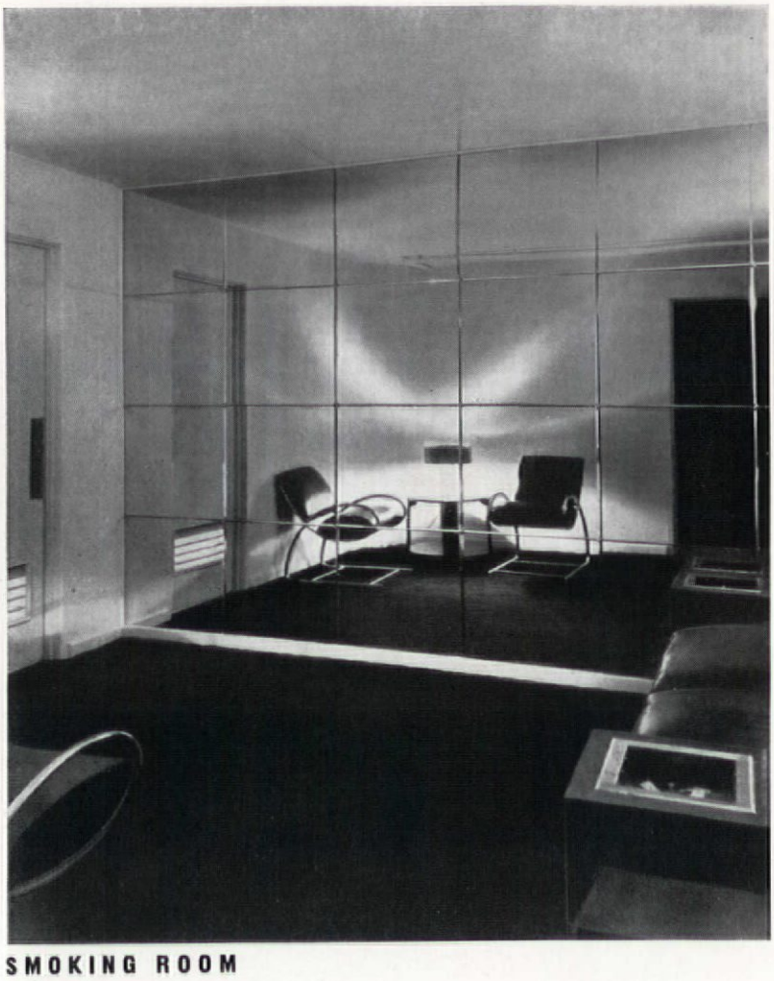


FIRST FLOOR SCALE IN FEET 0 5 10 15



BASEMENT





SMOKING ROOM

and equipment was specially designed, such as the carpeting, auditorium chairs, hardware, and furniture in the men's and women's lounges. The exterior is of aluminum and black glass. The marquise, of aluminum and porcelain enameled metal, is brilliantly illuminated by neon tubes and recessed lamps. A flower shop is incorporated in the entrance design. The men's lounge, illustrated here, is in brown and red, with one wall a solid mirror from floor to ceiling. The metal furniture is a variant on the standard tubular designs, and is upholstered in a dark red leather. The ticket window, shown below, is simple and effective.



TICKET BOOTH

CONSTRUCTION OUTLINE

FOUNDATION
Walls—poured concrete. Cellar floor—5 in. concrete on sand fill. Waterproofing—hydrated lime.

STRUCTURE
Exterior walls—brick facing 4 in. thick backed up with 8 in. of cinder blocks; all piers and pilasters—solid brick; all bearing partitions—brick or hollow building tile.

ROOF
Wood deck on wood joists supported on structural steel girders, covered with 1 in. of celotex insulation and 4 ply Johns-Manville built up roof—20 year bond.

SHEET METAL WORK
Flashing—galvanized Armco iron. Leaders—cast iron.

FLOORS
Auditorium, lobby, and foyer—all reenforced concrete and carpeted over ozite. Offices on 2d floor—battleship linoleum. Rest rooms in basement—carpet over ozite.

HARDWARE
Interior—chrome finish on bronze. Exterior—brass finish on bronze.

ACOUSTICAL CEILING
Kalite tiles, Certain-teed Products Corp.

PAINTING
Interior walls and ceilings—special treatment; trim—4 coats lead and oil, 2 coats enamel.

ELECTRICAL INSTALLATION
Fixtures—both direct and indirect.

PLUMBING
Cast iron vent and drain pipes, copper water piping.

HEATING AND AIR CONDITIONING
Steam system, air conditioned, water cooled, American Blower system. Kewanee steel boiler, coal-fired, automatic stoker. Radiators, American Radiator Co. Thermostat, Johnson Service Co. Hot water heater, Taco steam.

APARTMENT HOTEL, MIAMI BEACH, FLORIDA

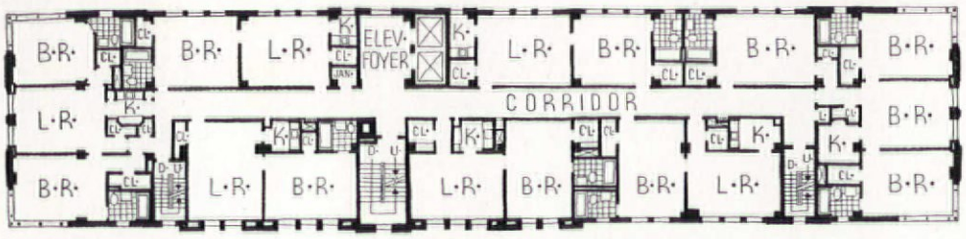


Fishbaugh

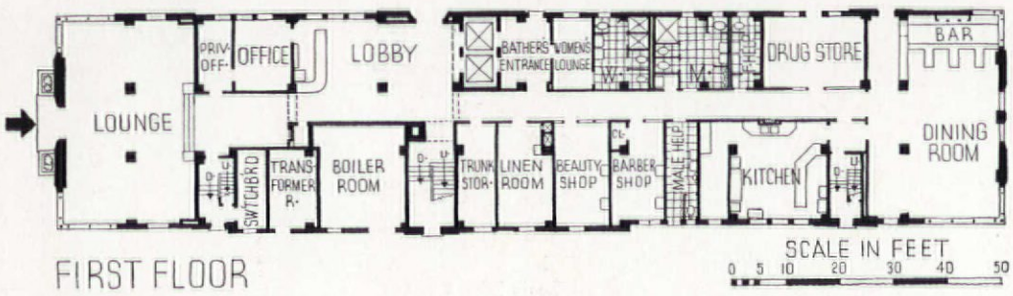
MARTIN L. HAMPTON, ARCHITECT

A record is claimed for this ocean-front apartment hotel: from the beginning of excavation to occupancy only 70 days elapsed. The hotel was first discussed on October 11, the plot was bought, plans were prepared, excavation commenced on October 20. In spite of delay caused by a hurricane, the job was completed two weeks ahead of the scheduled date of January 15. The building is of steel and concrete, and forms the first unit of what will be a 400-apartment hotel. The architect also acted as the contractor for the building. Cost: $325,000. Cubage: 577,400 at 56¼ cents.

APARTMENT HOTEL, MIAMI BEACH



TYPICAL FLOOR



FIRST FLOOR

The hotel plan is only two rooms deep, and provides for a limited number of room combinations, as shown by the typical floor plan above. The first floor contains shops and a heater room in addition to the usual hotel service rooms. The illustrations below show the type of decoration used on the interiors.



FOYER



DINING ROOM

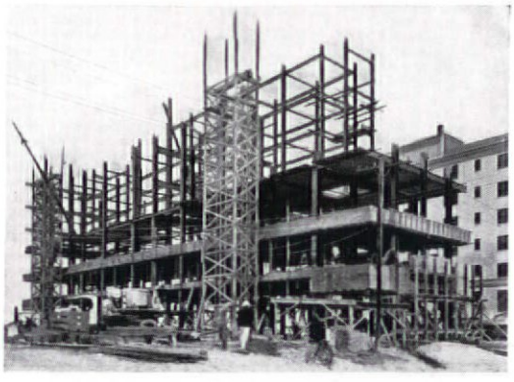
Gottscho Photos



EXCAVATION
OCTOBER 25, 1935



FOUNDATIONS
NOVEMBER 1, 1935



STEEL & FLOORS
NOVEMBER 29, 1935



WALLS & STUCCO
DECEMBER 27, 1935



Gottscho Photos

COMPLETED
JANUARY 3, 1936

The five photographs on the left testify to the phenomenal speed with which the building was erected. Foundations were laid one week after excavation began, and the setting of the frame proceeded with similar speed. Tenants moved into the lower floors while those above were being completed.

CONSTRUCTION OUTLINE

FOUNDATION
Concrete piling.

STRUCTURE
Structural steel frame, Morris Wheeler Co., Inc., Philadelphia, Pa. Steel stairs, Cornell Iron Works.

FLOORS
Reenforced concrete.

ROOFING
Johns-Manville specification, G. & L. Roofing Co., Miami, Fla.

SHEET METAL
Copper flashing at roof, American Brass Co., Waterbury, Conn.

WINDOWS
Double hung cypress sash and frames, East Coast Millwork & Fixture Co. Unique balancers, Chamberlain Metal Weatherstrip Co.

PLASTER WORK
Exterior wall—three coats Portland Cement. Interior—three coats plaster on U.S. Gypsum lath.

FLOORING
Oak block floor, E. L. Bruce Co., Memphis, Tenn. Bathrooms and kitchens covered with linoleum; Linowall wainscot, Armstrong Cork Products Co.

HARDWARE
Schlage Lock Co.

PAINTING
Exterior—Sherwin-Williams Co., No. 95 Aluminum. Interior—Wallhide, Pittsburgh Plate Glass Co.

ELECTRICAL WORK
Galvanized threaded conduit, Central Tube, Pittsburgh, Pa. Rubber covers and lead cable, National Wire Co. Switches and receptacles, Hart & Hegeman.

LIGHTING FIXTURES
Sampson Fixture Co., Chicago, Ill.

PLUMBING
Galvanized steel pipe, National Tube Co. Hot water tank, Williams Oil-O-Matic Heating Corp. Fittings, Crane Co. Bathroom fixtures, Crane Co. Bathroom accessories, Hoegger Inc. Kitchen equipment, Murphy Door Bed Co. Bar and fountain equipment, Conkle & Co., Miami, Fla.

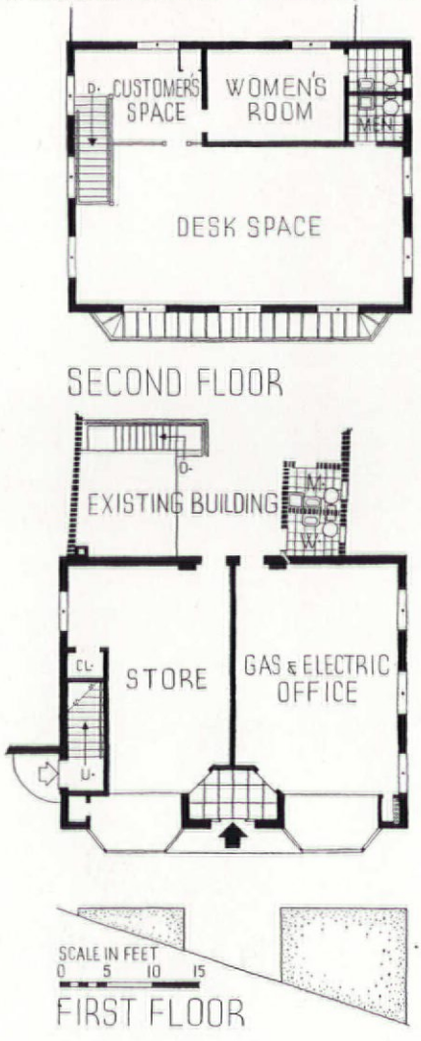
HEATING
Gas steam radiators, John B. Clow Manufacturing Co., Chicago, Ill.

VENETIAN BLINDS
Southern Venetian Blind Co., Miami, Fla.

ELEVATORS
Otis Elevator Company.

OFFICE BUILDING FOR UTILITY COMPANY, WAPPINGERS FALLS, N. Y.





LOUIS BOOTH, ARCHITECT

The efforts made by many of the public utility companies to construct buildings that would add to the attractiveness of the community have been increasingly noticeable during the past few years. Occasionally, as in this instance, their efforts are rewarded. This small building for the Central Hudson Gas and Electric Corporation has excellent character: it is dignified, in good taste, and in a scale suitable for a small town. The building is used for company office space and for the display of gas and electric household equipment.

CONSTRUCTION OUTLINE

STRUCTURE
Common brick veneer, air space, paper on shiplap and studs, inside celotex lath and three-coat plaster. Floors —wood framing, matched diagonal sub-floor, creodipt paper and white pine top floor.

ROOF
Wood frame sheathed and covered with 40# tin; flashing and gutters—tin.

INSULATION
Outside walls and attic floor—4 in. rockwool, Johns-Manville Corp.

WINDOWS
Show windows, commercial type Ariston.

FLOORS
Office, 1st floor—inlaid linoleum; shop—fir; 2d floor—clear red oak.

WOODWORK
Trim—clear red oak; interior doors—one-panel oak.

HARDWARE
Interior—solid bronze.

PAINTING
Interior: Walls and Ceilings—Velumina Wallhide. Trim, oak—oil stain, filler, three coats varnish. Trim, pine—two coats Kyanize Celoid. Sash—lead and oil. Exterior: Walls—U. S. Lighthouse Spec. whitewash; roof—venetian red, three coats lead and zinc.

PLUMBING
Fixtures by Kohler Co. Waste pipes—wrought iron; supply pipes, Mueller Streamline copper tubing and fittings.

HEATING
Steam, gas fired boiler, American Radiator Co. Valves, C. A. Dunham Co. Thermostat and regulator, Minneapolis-Honeywell Regulator Co.

OFFICE AND STORE, POUGHKEEPSIE, NEW YORK



Frank B. Howard

EDWARD C. SMITH, ARCHITECT

CONSTRUCTION OUTLINE

STRUCTURE
Brick walls, inside furring, metal lath and plaster. Floor and roof construction of wood framing.

ROOF
One inch insulation board over roof boarding. Roofing—15 year guaranteed built-up. All flashings 16 oz. copper.

STORE FRONT
Black Belgium Marble (imported), Vermont Marble Co. Door, window and window frame—aluminum, satin finish, by Zouri Store Front Construction Co. Glass—⅛ in. residential plate. The sign "Fuel" consists of "U" shaped stainless steel 4 in. projection with Neon outline in the hollow of the letters.

FLOORS
First-story floor is plain red oak, the vestibule is tiled.

WOODWORK
Interior doors—white pine, trim—white wood.

ELECTRICAL INSTALLATION
The wiring is BX cable with normal switch control.

HEATING
Generated from the adjoining bank building.

The economy and directness of the one word "Fuel" is well reflected in the design of the exterior. The owners, an organization which sells coal and oil, called for and got a building which had definite advertising value, but without offensive or garish use of signs and materials. The finished shop front is a veneer of Belgian Black marble, with aluminum used for all the exposed metal on door and sash. The sign is of stainless steel, trough type, with a double line of neon tubing inside. The cost of the building was $8,700. Cubage: 15,750.

BRITAIN'S BUILDING BOOM

PART II

Part 1: (August) Home building by the English State began in the middle of the Nineteenth Century, and, with the introduction of the subsidy, became a dominant factor in the building industry in 1919. During the last 17 years 860,000 houses have been built with a subsidy, and 1,500,000 without. Their standard is below that of the U. S.

Part 2: (Below) The mechanics of the most extraordinary building boom in two centuries include a realty tax based on income, a wage scale adjusted to the cost of living, a 95 per cent mortgage, a Government-depressed interest rate, and a fine regard for the virtues of cooperation. The causes of the Boom and what they mean to the U. S., together with an appendix on the architect.

In the last seventeen years, three million new homes have been built in England. This is roughly equivalent to the rehousing of ten million people, or one-fourth of the country's population, a feat of such magnificent proportions that it has become a function of the whole nation. Fully to understand it you must look at the surrounding body of law, of custom, of labor, and of finance—in brief, at the *mechanics* of this boom. And you must look at the Englishman himself; for it is in him more than in any other place that you will find an explanation of England's housing boom. The Englishman, first of all, is a fine credit risk, a notably better risk than can be found on U.S. books; and the Englishman, possibly from centuries of tight-packed living on his tight little isle, is deeply imbued with not only the virtues but also the necessity of cooperation. The whole complex of realty in England is *sui generis* and not to be compared with the U.S. version save in the most restricted manner. Not only the customs which embellish but the theories underlying every element from law to land are different. Beware the facile comparison; it is probably awry.

THE LAW

One of the most fundamental divergencies between the two countries lies in their conceptions of the nature of property. In Great Britain real property is taxed according to its income rather than, as in the U.S., according to its capital value. Prime corollary of this thesis is, of course, that, because they yield no income, vacant land and some classes of vacant buildings go completely untaxed. Thus the English speculative builder can pick up land at a price which does not have to take into account a back-log of taxes, and is therefore a great deal cheaper than equivalent U. S. acreage. Incidentally, this tax system retards new construction on vacant land, in contradistinction to the U. S. capital tax on realty which has been termed "productive *and* reproductive" because of its tendency to encourage the erection of "taxpayers." However, in the U. S. the real property taxes customarily bear anywhere up to 50 per cent of the costs of government, whereas in England they are somewhat less important as revenue raisers, the heavy duty being done by the income tax—which in England is "*the* tax," while real property taxes are called "rates."

The English tax is paid by the tenant, not by the landlord, and is not usually quoted in advertised rent figures. Its rate quite commonly runs to about 75 per cent of the net income, and in certain post-War years and in certain areas has actually touched 125 per cent or one and a quarter times the net rental. The going rate of taxation in the U. S. runs at about 2 to 3 per cent of the capital value. After allowing for the proper modifications, exemptions, etc., this is roughly equivalent to a tax on realty income of 40 per cent, or a bit more than half the English "rate." Non-payment or delinquency results in England in a lien on the tenant's income, occasionally in his imprisonment. On the landlord lies no onus.

LABOR

If the English tax system seems like a new bird, let the U. S. builder look at English labor to find himself on more familiar ground. English labor, and especially those workers in the building trades, are tightly unionized according to crafts. Nevertheless there currently exists the anomaly of rising unemployment in the face of increasing construction. This complicated situation is a direct outgrowth of the application of the subsidy to housing, a phenomenon examined in the last issue of The Forum. When, in 1923, the so-called Wheatley subsidy was offered to building, it immediately became apparent that no substantial boom was possible unless the building unions increased their numbers. In a cagy bargain the building unions agreed with the Government to increase their numbers to a point where by 1934 they would have "an effective capacity" of 225,000 houses a year in return for Government assurance of a subsidy which would guarantee the erection of two and a half million houses in ten years. Up through 1928 the Government maintained a high rate of subsidized building, labor increased its union enrollment, and all parties were content. Then a Conservative Government decided to reduce subsidies; but the building unions unfortunately were unable to discharge members, did not as a matter of fact realize that the reduction of subsidies was to become a permanent policy until 1933 when the subsidies were virtually stopped. The 1927 volume of 273,000 homes has only been surpassed in the last two years. Meanwhile, unemployment among the building trade unions—whose members, like most British labor, are insured against unemployment—has increased from 150,000 in one million workers in January, 1929, to 267,000 in one million workers in January, 1936. Worth noting in this conjunction is the Trades Union Act of 1927, passed after the General Strike, which outlaws the "sympathetic" strike of one industry for another.

Wage rates in England are determined by the National Joint Council for the Building Industry, a loose federation of building trade employers and employes. This body determines nation-wide scales of wages under which: 1. all towns are graded into eleven classes by size; 2. a basic wage rate is formulated with reference to the cost of living index of the Ministry of Health; 3. that rate is adjusted to the town in which it is applied, to determine the going rate; and 4. all labor is divided into skilled and unskilled workers, the latter receiving wages roughly 75 per cent the size of the former. The basic rate is revised periodically according to fluctuations in the cost of living, and towns are constantly being regraded upon application to the National Joint Council. This arrangement has the obvious advantages of assuring uniform wage rates for all building labor in each town, besides providing labor a living wage in reference to living costs. Currently, the wage rate for skilled labor in a top grade town (such as Liverpool, or Birmingham) is 1/6, or roughly 37 cents an hour. The special high rate which obtains in London is 1/8, or 41 cents an hour. Standard week is 40 hours. For comparison, an hour's work by an American bricklayer or mason will buy him 15 lbs. of white bread, or 3.8 lbs. of butter, or a carton of cigarettes; in England he would get 9.1 lbs. of white bread, or 1.1 lbs. of butter, or 2½ packs of Woodbine cigarettes.

The standard of work done by this type of labor is extremely hard to gauge. By dividing the net output of builders engaged in new construction by the average number of workers employed on new construction in 1930, the Census Bureau has arrived at the conclusion that the net output per man per year in new construction is $1,010. Generally speaking the methods used by labor in England are somewhat less efficient than those of this country, mechanization being vigorously resisted by the unions. Exception to this is to be found among the carpenters and joiners, into whose trade a large amount of factory assembly has successfully been introduced on such items as door and window frames, and staircases.

English construction is by custom conducted on a lower plane than equivalent work in the U. S. Because it rarely freezes, a six inch foundation is considered adequate. Plaster is customarily applied directly to all hollow brick walls. The mill work and carpentry have a finish too rough to be tolerated in this country. The practice of drying buildings during erection to avoid later adjustment has only recently—and tentatively—been tried out. But the English generally use fireproof tile and slate where the U. S. builder puts inflammable wood shingle on his roof.

In sharp distinction to the U. S., labor in England customarily accounts for but 30 to 35 per cent of the total cost of construction. Herewith an analysis of costs in a three-room cottage in which plumbing is included but not specified as such:

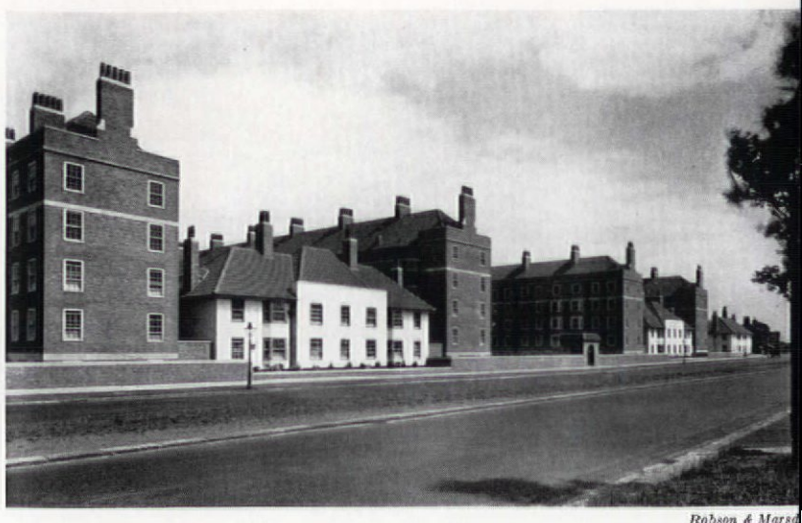
Labor:	Per Cent
Excavators and general laborers	36.6
Bricklayers	16.0
Slaters	1.7
Carpenters and joiners	15.7
Plasterers	9.0
Plumbers and gas fitters	4.7
Painters and decorators	6.3
Glaziers	0.3
Foreman and timekeeper	3.7
Watchman	2.3
Builder and clerk	3.7
	100.0

Materials:	Per Cent
Aggregate	2.3
Bricks	18.6
Cement	3.1
Concrete mat	2.5
Drain pipes	1.8
Grates and ranges	2.6
Gutters and down pipes	1.8
Hardware	4.5
Joinery	15.4
Lead	3.1
Slates	12.8
Timber	13.9
	82.4
Others	17.6
	100.0

Contracts are usually let under the open bid in England, although some work is still done on the "cost-plus" basis. The regular procedure is for the architect to draw up plans, after which an independent "quantity surveyor" draws up a list of the quantity, quality, and types of materials needed, and the contract is submitted for bidding. The quantity surveyor then inspects the building from time to time during construction. With most large



Stewart Bale



Robson & Marsd

THE LIVERPOOL CORPORATION has erected 30,603 houses and apartments to hold 12 per cent of its 860,000 population. The buildings are all about as handsome and as mildly institutional in appearance as these.

contracts the great part of the work is then let out to specialist subcontractors, although the general contractor may retain the brick work for his own. Quite often the general contractor will have a financial interest in his subcontracting firms. An exception to this method obtains in the North of England, where a separate contract is given direct to each trade. Speculative builders also frequently hire direct a considerable proportion of their skilled labor. Brickwork, joinery fixing, and tiling are being done more often by piece work among speculative builders today than hitherto.

The vast majority of British houses are of solid brick construction, and the brick has in consequence assumed a predominant position in housing economy. Producer of one-quarter of all British bricks is the London Brick Company & Forders, Ltd., a firm representing the amalgamation in the last decade of some eighteen smaller firms. Killing off the money losers and stepping up the profit-makers among its constituent brood, this firm today has its own design and engineering shops. During May, 1936, it delivered 157,259,296 bricks in 24 working days. The price of brick today runs anywhere from $8.75 to $10 per 1,000 at the factory.

BUILDING SOCIETIES

If you were to go to England this week to raise some money with a mortgage the first thing you would learn would be that in that country a building and loan association is called a "Building Society." And the second thing would be that English Building Societies are much more imposing affairs than their American counterparts. They are bigger, more powerful, more pompous, and much more elegant. But, more importantly, they are so much more substantial that they are classed in English minds with savings banks.

The first Building Society on record was formed in Birmingham in 1781. It consisted of a group of men who paid money on the installment plan to have a certain number of houses built. It was not until the second half of the nineteenth century that a Society foresook this principle of cooperation and self-termination to become a self-perpetuating corporation operating under limited liability. In 1874 the Building Societies Act recognized this new form of organization, and at about the same time the Building Societies, having thus insinuated the concept of the corporate body into mortgage financing, took the further logical step of differentiating between the borrower and the investor.

Although the Act of 1874 gave legal recognition to the new form of building society, it made no effort to regulate the movement. Inevitably, in 1892, the first large scandal—the failure of the Liberator Building Society—remedied this situation. By the Building Societies Act of 1894 the Chief Registrar of Friendly Societies was accorded wide regulatory powers, including prescription of the form of building society accounts, and the right to call for information regarding mortgage assets. But to this day he may not send examiners to any Society without the written petition of two stockholders.

In 1872 a Royal Commission estimated that there existed some 2,000 Building Societies in England with total assets of $85 million. In 1895 the total assets of the movement stood at $275 million; in 1913 at $325 million. During the same period mortgages outstanding rose from $220 million to $305 million. Coincidentally, the

number of Building Societies declined from a high of 2,795 in 1890 to 1,550 in 1913, a shrinkage caused by the gradual elimination of the old type of self-terminating, "friendly" societies in favor of the newer type which today comprises about 99 per cent of all societies in point of capital. By 1914 the Building Society movement in Great Britain was actually at a standstill; in the decade from 1904 through 1913 the total assets of the Building Societies had shrunk by $5 million. It seemed that the movement had reached its modest peak, had found its place in the national economy. In 1920 the total assets rose by $100 million to $435 million. The rise seemed interesting but hardly significant. By 1924, however, the total had risen to $720 million and it was evident that the Building Society had by no means found its niche in 1914, that it was in fact expanding so rapidly that the very nature of the organism had changed.

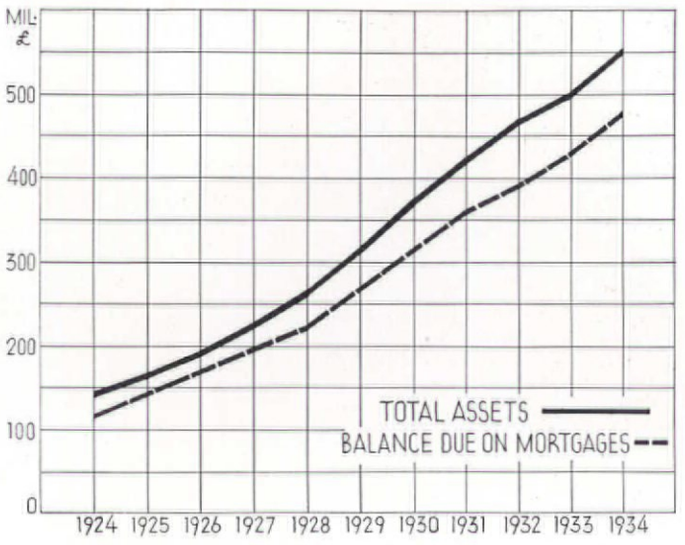
A glance at the chart will show you one of the most remarkable curves to be plotted by any post-War economic system. From the $435 million total of 1920 the total assets of English Building Societies rose in 1934 to the absolutely staggering total of $2,775 million, an increase of 537 per cent. Meanwhile, total mortgages rose from $345 million to $2,380 million, an increase of 600 per cent. As the chart shows, the total of assets increased somewhat faster than the total of mortgages from 1928 on. In 1924 money due on mortgages amounted to 83 per cent of total assets and ten years later they constituted 85 per cent, despite the fact that total assets had increased at a faster absolute rate. From this it may be inferred that the general policy of the Building Societies has been to maintain a cushion of liquid assets of about 15 per cent between their mortgages and their total assets.

The measure of the Building Society's importance today may best be stated in the fact that it comprises the largest single type of institution catering to the small investor. Against its total assets of $2,775 million, the British Post Office Savings Bank showed only $1,775 million, the National Savings Certificates $1,965 million. About 12 per cent of the adult population of Great Britain are currently investors in Building Society certificates.

This tremendous growth in such a short period has resulted in some basic changes in the nature of building societies. From the small "friendly" body of their origins, the Societies have now typically developed into large corporations. And while the total number of Societies has remained almost stationary during the last decade, the concurrent increase in assets has tended only to make the large Societies larger, and smaller ones remaining at their old level, or rising only slightly. Thus:

Number of Societies whose individual assets are:	1924	1929	1933	1934
$250 millions or over	...	1	1	1
$125 " to under $250 millions	...	...	1	3
$50 " " $125 "	1	4	9	7
$10 " " $50 "	13	19	32	36
$5 " " $10 "	16	21	22	23
Under $5 million	1,082	788	789	787
Total permanent societies	†	833	854	857
Total terminating societies	†	193	159	150
Total societies	1,112	1,026	1,013	1,007

†Terminating societies not separated.



From this table it will be observed that in 1924 no Society had as yet passed the $125,000,000 mark, and only one stood above $50,000. But today the Halifax Society has total assets in excess of $500,000,000 and there are eleven Societies with assets in excess of $50,000,000. One per cent of the companies in existence today control 58 per cent of all Building Society assets; 5 per cent control more than three-fourths of the total assets. But the size of the average Society remains at the surprisingly low figure of $250,000.

THE MORTGAGE

THE British Building Society was born and raised on the concept that a single mortgage with an 80 per cent coverage is good business, where the coverage applies to value or sales price, whichever is lower. Inaugurated in the middle of the last century, the practice of accepting this type of encumbrance carried over into the post-War era. But in the middle 20's, as the boom grew, there grew with it a demand for a lower coverage, a demand which came entirely from the speculative builder. The result of his importunities was the so-called "pool" system, whose net effect is to lower the down payment requirement of the purchaser by making the Building Society and the builder jointly assume the added increment of risk. The system works like this: On a house valued at $5,000 the society would normally advance 80 per cent or $4,000. But in order to sell his houses quicker the builder wants to reduce the purchaser's equity from the $1,000 thus required to $250. He therefore deposits with the society the difference of $750 between the society's requirement of $1,000 and the buyer's deposit of $250. He repeats this performance with the next, say, three houses, thereby assuming all the risk involved in the reduction of equity. However, for the second group of six houses, although the purchaser continued to put up only $250 on a $1,000 equity, the buyer contributes nothing. Instead he agrees to pay in full the $1,000 equity in case of default. Here the risk falls upon the Building Society, which must trust the builder. For succeeding houses the builder will then put up one-third of the $750 difference, or $250. All his deposits are held in a pool, to be drawn against in all cases of default. So long as the defaults do not amount to more than one-third the total nobody



Aerofilms Photos



PUBLIC INDIGNATION has stopped the "Ribbon Developments" (right), which crowd the public highway to save the cost of building their own. Above, in Yorkshire, is the speculative builder on better behavior.

loses any money, the builder sells more houses, and the buyer enjoys a 5 per cent equity. In practice, the equity requirements insisted on under the pool arrangement vary from 5 to 10 per cent, while the amount deposited by the builder goes from one-third to one-quarter of the unmet equity. In all cases the builder personally guarantees the whole amount advanced in excess of the normal 80 per cent, and gives the society a lien on the pool of deposits until the loans on the houses have been reduced to two-thirds of their total. At this time he may withdraw his "pool" deposits. Meanwhile, however, he has been receiving interest in that "pool" money from the society. Such an agreement, obviously, is dependent for its success on the most painstaking scrutiny of the character of the builder and the purchasers involved, and the societies make it a practice to inspect the merits of each would-be buyer individually. The "pool" system has become extremely popular since the War with the growth of subdivision activities.

A direct outgrowth of the "pool" system was the so-called "Tri-partite" agreement under the Housing Act of 1933. Under its terms Local Authorities were empowered to underwrite 10 per cent on 90 per cent mortgages, in return for which the building societies granting these mortgages agreed to charge a rate of interest 1 per cent lower than the prevailing rate for 30 years. But to date the plan has met with scant acceptance, only 15,000 mortgages having so far been so insured.

Since the War the Building Societies of England have financed the sale of better than 1,300,000 of the three million homes sold. The tremendous number of deals involved in part explains the existence of the branch offices which blanket the country for the larger societies. This practice results, of course, in a very healthy diversification of risk, and lowers the danger of assuming poor risks simply to increase business. Last April the London *Economist* published an extremely able analysis of 98 Building Societies, a number which between them held two and one-half billion dollars, or about 85 per cent of the total assets of the movement. A summation of this analysis is given on the next page. A significant by-product was the breakdown of mortgage balances:

ANALYSIS OF MORTGAGE BALANCES, 98 SOCIETIES

	1925	1929	1932	1933	1934	1935
Under £500:						
Average per mortgage (£)	316	268	277	283	289	295
Total as % all mortgages	*46.8*	*44.5*	*40.8*	*42.1*	*43.5*	*44.3*
£500—£1,000:						
Average per mortgage (£)	621	673	669	659	652	646
Total as % all mortgages	*30.7*	*36.1*	*42.9*	*43.0*	*42.3*	*41.4*
£1,000—£3,000:						
Average per mortgage (£)	1,459	1,368	1,357	1,420	1,415	1,423
Total as % all mortgages	*13.7*	*12.2*	*10.9*	*9.7*	*8.5*	*7.5*
£3,000—£5,000:						
Average per mortgage (£)	3,820	3,844	3,763	3,717	3,476	3,876
Total as % all mortgages	*3.1*	*2.3*	*1.8*	*1.8*	*1.8*	*1.9*
Over £5,000:						
Average per mortgage (£)	9,537	10,643	10,755	11,281	11,769	13,065
Total as % all mortgages	*5.5*	*3.8*	*3.2*	*3.1*	*3.1*	*3.7*

From this table it will be observed that the standing mortgages with a value below $5,000 (for convenience make £1 = $5) comprise 85 per cent of the total, that those valued below $2,500 comprise 44 per cent. The mortgages are typically advanced to owner-occupied properties, a large number under the "pool" arrangement discussed above.

INTEREST RATES

In 1932 the British Government stepped into the money market and as a result of manipulation of currency, produced a sudden lowering of money rates. The effect was to leave the Building Societies in a ticklish position. At the time they had been paying an average of 4.49 per cent interest on their shares and 3.71 per cent on their deposits. The general low rates of interest elsewhere made it imperative that the Societies reduce their rates; but because their money is potentially short-term money, the rate must not be lowered to such an extent as to cause withdrawal. The solution has been to reduce the average interest rate on shares and deposits to 3.55 and 2.97 per cent respectively, and at the same time to place a strict limit on the amount of investment received from an individual depositor. In this manner the cash reserves have been adequately maintained, and the Societies have presumably avoided taking in much "short term" money attracted simply by higher-than-average rates. Since the rates quoted above are equivalent to about 4.30 and 3.70 per cent *when taxed*, the rate is still relatively generous.

Meanwhile the going rate on mortgages during the 20's had hovered around 6 per cent. With the lowering of the cost of money the rate has gradually dropped until today 4½ per cent mortgage money with an 80 per cent coverage is the rule, with many of the smaller suburban societies offering money as low as 4¼ per cent. Fundamentally, this rate is made possible only by the English investor; it is dependent upon his willingness to

	Average Outstanding (£'000s)			*Effective Rates (Per cent)*		
	Shares	Deposits	Mort-gages	*Shares*	*De-posits*	*Mort-gages*
1925	96,928.6	18,793.5	100,179.3	*4.38*	*3.85*	*5.85*
1929	194,645.7	28,344.0	199,144.8	*4.51*	*3.92*	*5.78*
1932	309,053.5	44,607.4	309,059.8	*4.49*	*3.71*	*5.88*
1933	334,680.5	55,795.6	334,809.5	*3.84*	*3.46*	*5.60*
1934	350,592.0	72,024.6	370,883.6	*3.69*	*2.80*	*5.48*
1935	365,211.7	90,009.0	414,530.9	*3.55*	*2.97*	*5.20*

INTEREST RATES

invest savings at 2½ and 3 per cent with the building societies. That he is in fact willing to do so is due to the character of the Building Society. As we have seen, the great majority of building money assets are controlled by companies of enormous size with branch offices reaching into dozens of towns. This size alone imparts to the Building Society a dignity which encourages a low rate of interest.

Equally imposing is the calibre of the men connected with the movement. Patron saint of Building Societies, for instance, is Sir Josiah Charles Stamp, G.C.B., G.B.E., D.Sc., Ll.D., F.B.A. President of the Abbey Building

PARTICULARS OF 98 BUILDING SOCIETIES
1925-1935
(Amounts in £'000)

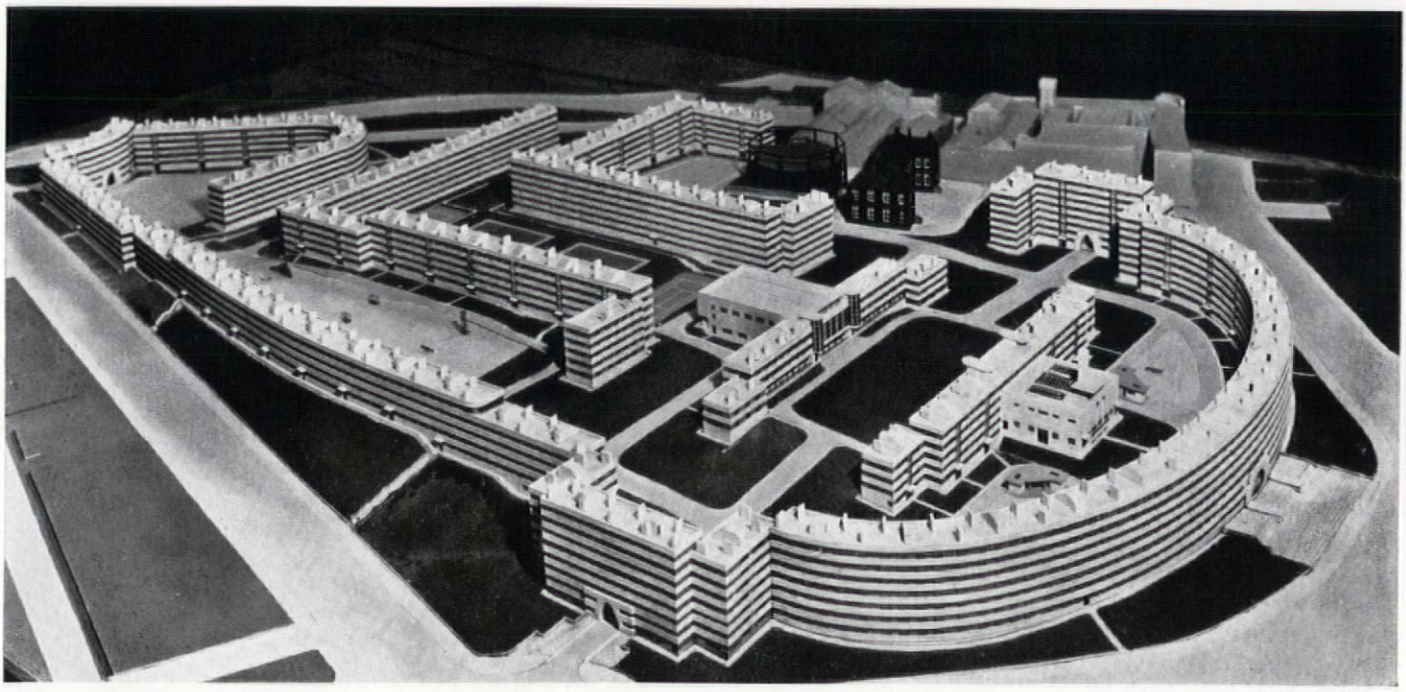
	1925	1929	1932	1933	1934	1935
Total assets	135,304	255,604	394,869	418,560	464,513	500,678
Shares outstanding	100,243	210,425	325,745	343,616	357,568	372,855
Deposits outstanding	21,030	29,477	49,615	61,975	82,073	97,944
Due on mortgages	115,994	216,333	320,393	349,225	392,541	436,520
New shares subscribed	29,383	54,152	61,958	33,367	45,828	41,387
New deposits	10,638	12,421	23,278	28,251	38,926	40,166
New mortgage advances	41,526	62,823	66,117	83,539	102,944	106,243
No. of new mortgages	*N.A.*	*115,856*	*127,362*	*155,613*	*178,112*	*188,625*
Shares withdrawn§	15,072	28,458	36,742	32,935	30,150	22,887
Deposits withdrawn§	8,706	13,891	14,720	15,192	20,300	26,187
Mortgages repaid§	24,858	39,723	61,310	73,390	78,392	83,635
Interest on shares	4,242	8,786	13,883	12,837	12,930	12,970
Interest on deposits	724	1,110	1,658	1,927	2,013	2,670
Interest on mortgages	5,857	11,491	18,184	18,732	20,326	21,556
Mortgages:						
Under £500—						
Amount (£'000)	54,263	96,203	130,685	147,010	170,871	193,381
No.	*172,055*	*358,482*	*471,639*	*519,309*	*591,725*	*655,026*
£500–£1,000—						
Amount (£'000)	35,600	78,018	137,407	150,097	166,209	180,559
No.	*57,365*	*115,875*	*205,428*	*227,744*	*255,125*	*279,330*
£1,000–£3,000—						
Amount (£'000)	15,903	26,259	34,872	34,036	33,252	32,815
No.	*10,927*	*19,170*	*25,700*	*23,964*	*23,488*	*23,054*
£3,000–£5,000—						
Amount (£'000)	3,606	4,943	5,888	6,191	7,237	8,121
No.	*944*	*1,286*	*1,565*	*1,666*	*2,082*	*2,095*
Over £5,000—						
Amount (£'000)	6,322	8,248	10,141	10,740	12,227	16,305
No.	*663*	*775*	*943*	*952*	*1,039*	*1,248*
Properties 12 mos. in possession—						
Amount (£'000)	32	54	234	275	286	298
No.	*47*	*80*	*256*	*330*	*424*	*434*
Properties 12 mos. in arrear:						
Amount (£'000)	39	97	240	292	245	190
No.	*79*	*159*	*320*	*382*	*356*	*290*
Loans to municipalities	7,867	18,524	34,929	41,080	41,101	38,812
Other investments	7,374	11,072	18,990	14,442	11,814	12,040
Cash	2,766	7,330	16,011	10,110	14,268	9,783
Total P. & L. income	6,575	13,618	21,114	21,705	23,149	24,075
Management expenses	714	1,306	1,411	1,909	2,238	2,457
Income tax	230	511	1,785	2,168	2,210	2,162
Balance of P. & L.	3,925	8,864	15,544	15,336	16,066	16,850
General reserve	4,480	9,697	13,284	15,217	17,354	19,741
Reserve No. 2	265	445	1,127	1,490	1,871	2,395

§Excluding interest as far as possible.

From The London Economist

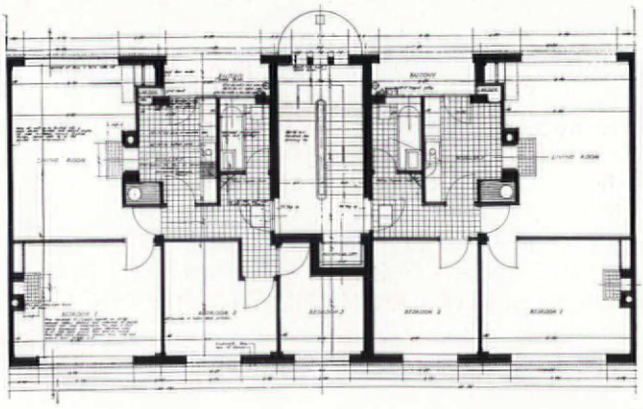
BRITAIN'S BUILDING & LOANS

Society (second largest), he is also chairman of the Board of the London, Midland and Scottish Railway, member of the Court of Governors of the Bank of England, member of the Cabinet's Economic Advisory Council, chairman and governor of a handful of schools and colleges, President of the Institute of Transport, representative for Great Britain on the Dawes Reparations Committee, author of several books ranging in interests from "Ideals



Sydney W. Newbery

NOW UNDER CONSTRUCTION in Leeds, this public project has 939 apartments, 20 shops, a community hall, a clinic, elevators. Right, plans for its three- and four-room apartments. Occupancy, February, 1938.



of a Student," to a translation of Rignano's "The Social Significance of Death Duties." And then there is Sir Harold Vincent Mackintosh, a director of the Halifax (largest) Society. Besides being president of England's largest toffee-making firm, he is President of the World's Sunday School Association, and of numerous agricultural shows.

Biggest guns of the whole movement, however, are Sir Harold Bellman and Sir Enoch Hill, managing directors of the Abbey Road and the Halifax Building Societies, respectively. Under Sir Harold, the assets of the Abbey Road rose from £1 million to £47 million, a feat largely due to his organizing genius. A powerfully built, tanned, and handsome man with waving silver hair, his voice is the voice of the Building Society movement. A personal friend of the King, a Governor of the arch-conservative London School of Economics, he also numbers among his friends Building & Loan Leaguers Herman F. Cellarius and Morton Bodfish and the late Nicholas Longworth. Like those of Bellman, Sir Enoch's beginnings were humble. At the age of eight he was working in a silk mill. In 1903 he became secretary of the Halifax Permanent Benefit, which in 1928 became, through a merger, the largest society in the world. A terrifically hard worker, highly popular with his men, Sir Enoch has never learned to put the aitch in "Halifax."

In all the history of the Building Society movement there have been only two failures, and both of these occurred before the War. No Building Society has ever refused a withdrawal, and the percentage of losses on defaulting borrowers is below 1 per cent. For these reasons, if for no other, the movement today finds itself in an extremely healthy position. But, to reverse the coin, it is generally admitted that the Building Societies have in the last three or four years made many loans they would rather see off their books. And it is the calibre of the house's construction rather than its owner's credit that they regret.

COOPERATION

THE English do not know for sure what has given them so much success in building houses; but they think that it was due to their habit of attacking their problems as they arose, one by one, rather than all at once. Which is to say that they would like once again to accuse themselves of "muddling through." But if their attack has been haphazard, their ranks have been knit exceedingly tight. In Great Britain cooperation long ago graduated from a convenience to a recognized necessity, and the results are noteworthy.

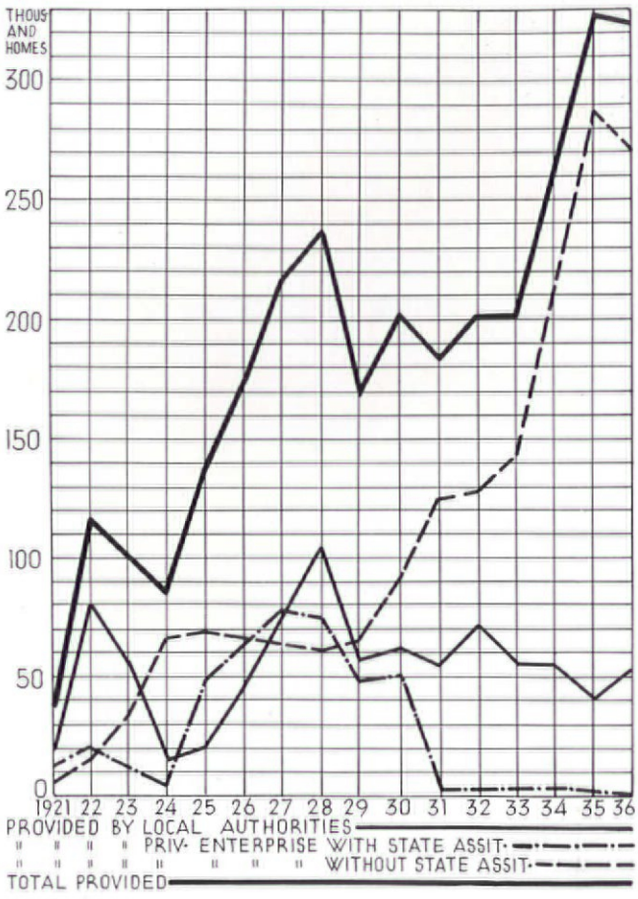
The National Joint Council for the Building Industry has already been mentioned above. The membership of the Council is drawn from the employers and employes of the building industry, and its chief function has been

to determine the going wage rate for union labor in Great Britain. Its jurisdiction is unofficial and, therefore, does not extend to those members of the building trades who are not also members of the unions, nor are its orders always carried out in districts where the unions are weakly organized.

The Building Industries National Council affords a prime example of the virtues of integration in building. In 1929 an unofficial group of men connected with the building industry was formed into the Building Industry Council of Review, whose main purpose was to bring together into one unified body all the various organizations then affiliated with building. By 1932 this body had grown into the National Council, a body officially entitled to represent and speak for the Building Industry. On the Council were represented the manufacturers, the surveyors, the employers and the employes of Building, as well as the Royal Institute of British Architects. Since its inception this Council has afforded some prime examples of what this type of organization can do. Among typical accomplishments in its three and a half years of existence: elimination of delays in the approval of building schemes by local authorities; passage of a bill designed to cure malpractice in the measurement of sand and ballast in bulk; revision of the antiquated building code used by the London County Council; studies in plumbing, sanitation, fire prevention, and elevator installation which became the basis for legislation, much of which has been adopted. In addition the Council is currently carrying on studies in standardization of products in the industry, on the effects of rent restriction, on the use of time and progress schedules, on the education of the public to building standards, on public works policy, on booms and slumps and the determination of a norm for the building industry. Finally the Council publishes a monthly Building Industries Survey, a limp bound, shiny paper booklet of some 80 pages which costs $7.50 a year. A typical issue will contain such information as the general statistical position of the trade, a review of the output of materials, the use and demand for labor of all types connected with building, a general section devoted to building news of the month, and, invariably, a set of statistical tables showing building activity, unemployment by trades, months, and districts, imports and exports of building materials, and building material prices for the month.

This Council has proved itself extremely intelligent in its approach to the basic problem of coordinating the building industry. But it seems doubtful that it could have accomplished as much as it has had it not been for the efforts of that champion of common sense and better living, Sir Raymond Unwin, father of Town Planning, and giant of Housing. It was mainly due to his own efforts in 1930 and 1931 that the Council came into being, and he served as the Council's first president from 1933 through 1935 at the same time that he was President of the Royal Institute of Architects and special adviser on housing to the potent London County Council. Today he has retired in favor of another member of the Royal Institute of British Architects but his hand is still heavy in Council affairs.

The National Association of Building Societies is to the Building Society what the U. S. Building & Loan League is to our native building and loan association. The difference between the two organizations, British



A BOOM IN CHEAP HOMES

and U. S., is one simply of degree. The British represents a movement which has acquired for itself a much more respected, and important position in the national economy. The Association was founded in 1869 "to watch proceedings in Parliament . . . and to further the interests, privileges, and advantages of such societies." Terminating societies were barred from membership and today the Association holds only 377 Building Societies; but they control over 90 per cent of the capital of the movement, so that the Association can be said, in at least a coercive sense, to be "representative." Until the last four years the Association was little more than a social club, and the occasion for an annual display of pomp at some Continental watering place. But latterly the extreme competition of the boom market, and the tremendous piling up of assets within the movement have caused its members to place more control in the hands of the Association. Most notable examples of the new powers of the Association are: the establishment of the Building Societies Enquiry Bureau, a credit pool for members; the Building Societies Institute, a training school for prospective employes; and the so-called "Code," formulated this May, and to go into effect this October. Fully titled the Code of Ethics and Procedure, this is an agreement sponsored by Sir Harold Bellman and the more potent members of the Association in an effort to stabilize lending practice within the movement. It prescribes a fixed but still undisclosed maximum for mortgage coverage, a fixed minimum for interest rates. To date 228 societies, representing 87 per cent of the assets of



Keystone Photos



LONDON APARTMENTS are nearly as modern inside as they look outside. One room and kitchen in Chelsea (left) rent for $450, including taxes. In the cellar is a 60-car garage.

the movement have agreed to accept the Code; and since acceptance of the Code has now become a prerequisite for membership in the Association, the dissident 13 per cent will either have to give in before October when the Code goes into operation, or get out of the Movement.

Finally the Association has for years represented the Building Societies in their efforts to maintain Building Society interest payments on a tax free basis. The nub of the agreement between the Building Societies and the Revenue Bureau is this: Building Societies pay out interest to people who have incomes too small to be taxed, as well as to people who are taxed; the Government normally would have to collect these taxes by assaying the entire group, later refunding; in consideration of paying the interest on the taxes direct to the Government, the Building Societies receive a preferential rate whose total equals the tax which would be paid only by those whose incomes are large enough to be taxable, minus the cost of collection. The full savings thus effected are passed directly on to the individual receiving Building Society interest; and naturally, this interest is not taxable a second time.

CAUSES

FOUR years ago England came out of a severe depression and since that time she has experienced uninterrupted and ever-increasing prosperity. And it has been widely recognized that the major factor in this prosperity has been Building, whose upward trend has never dipped in fifteen years. Look once more at the chart showing the rise in British Building and note how unprecedented was the rise which occurred from 1933 on. To explain the perpendicularity of this graph many an analysis has been made. Culled from these are the following explanations, all in smaller or greater degree responsible for the Boom:

1. The world depression and the consequent rise in nationalism lost Great Britain much of her foreign trade. Compensatory efforts were made to cultivate the home market. The resulting dearth of work in some trades and the increase in others led to a reorientation of manufacturing centers in Britain. This caused a sudden demand for new housing. *But the Ministry of Health reports no decrease in the shortage of housing, such as would be caused by the concurrent evacuation in favor of new locations.*

2. Building costs have fallen off slightly in the last four years. *But a 10 per cent decrease in building costs cannot be responsible for a 100 per cent increase in building.*

3. The yield on stocks and bonds fell rapidly at the end of 1931, sending investments into houses and land. *But the boom occurred largely in the less-than-$5,000 houses, whose owners rarely own enough of such investments to be affected by such a fall.*

4. In August, 1932 interest rates on mortgages fell ½ to 5½ per cent, and in March of 1933 they fell to 5 per cent. This decrease exhibits a close correlation with the rapid rise in building, which began to rise at almost the same time as the interest rates began to drop. *But non-residential building which would be expected to react more quickly to cheap money showed no rise until 1934; and the small home owner does not usually show such an immediate reaction to money rates.*

5. While the population has been slowly increasing since the War, the number of family units showed a

much sharper rise than usual after 1932. Presumably this rise was due to an extraordinary amount of undoubling, plus the fact that the size of the English family has declined during this century from 5 to 3. *But while this may accentuate a demand, it does not make a sale.*

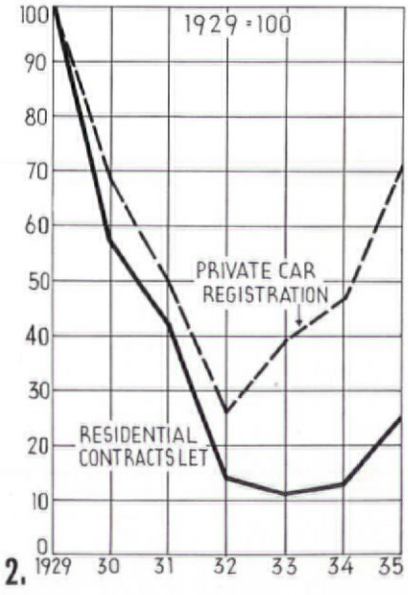
What is probably the most astute explanation of the British building boom was advanced by Geoffrey Crowther, economist and pundit for the London press. Having by chance one day to study first the curve for residential building and then that for new car registration in England during the last five years, he observed a very close correlation between the two (see below). This coincidence led him into this reasoning: The summer of 1932 —year of the War Loan Conversion and the Lausanne Peace Conference—saw a marked revival of confidence in England. The return of confidence occasioned a large volume of spending. This spending was directed to residential building but not to commercial building, to private cars but not to commercial vehicles. Therefore, it was spending by the consumer rather than by the producer. This meant that the consumer had the money to spend. The reason he had more to spend was that the gap had been widening between the cost of living (which was going down rapidly) and the national income (which was going down slowly). Between 1927 and 1932 the national total of wages and salaries decreased by 320 million dollars. In the same period the expenditure on food, clothes, liquor, and tobacco fell one and a half billion dollars. Ergo there remained a net of $1,180,000,000 in the national pocket. From this money and the renewal in confidence came the boom.

LESSONS

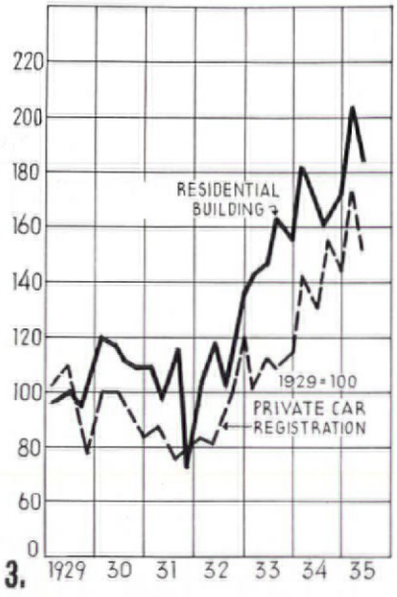
To hark ten pages back, the British building boom is an event which is in a literal sense extraordinary and from which few lessons to fit the commonplace can be drawn. The income tax on real property, the subsidy for building, the dole for labor, the guarantee for mortgages, all have their drawbacks as well as their virtues, all are dependent in some degree on the nature of the soil that holds them. There remain from the British experience only two kernels of fact which can with profit be examined by the U. S.: the British version of the single mortgage system, and the British version of trade cooperation.

Cooperation is a word which, from too much repetition, falls dead on the American ear. It has been bandied about too many "pep" lunches, preached from too many after-dinner pulpits, and abused by too much insincerity. But the cogency of the fact nevertheless remains: if Building became an integrated industry, instead of a million small, competing and wasteful businesses, it and the customers would profit immeasurably. In England Building has at least made a beginning toward this integration. The Joint Council, the National Council, and the National Association all function, and—what is important—all have a substantial body of achievement to their credit. From an examination of the surrounding facts it would seem that the only element indispensable to the achievement of this

BRITAIN'S BOOM RAISES NO ECHO
in the U. S. British private car registration, neatly dogging British residential building (Graph 3), set Economist Crowther to thinking. But the U. S. carhouse record (Graph 2) lacks correlation, spurs no one to thought. Thoughtful Crowther found a widening gap between the cost of living and the national income, a gap which gave more British consumers the price of a new house. In the U. S. (Graph 1) the national income (which is "Purchasing Power") has, since 1933, been approaching ever nearer to the cost of living (which is "Composite Demand"), leaving less and less money in the national pocket.

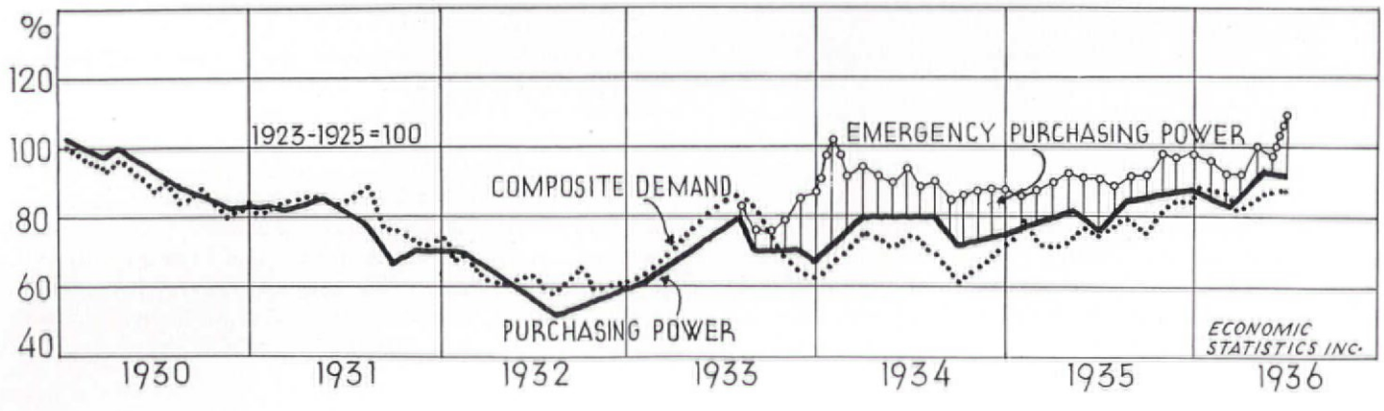


2.



3.

1.



cooperation is one man strong enough to impose his own integrity on the movement. In England it was Sir Raymond Unwin, an architect and an incorruptible idealist. In the U. S. it might be an Owen D. Young, a Robert Moses, or a Stephen Voorhees.

The notable fact about the British version of the single mortgage system is, of course, that it affords the Britisher a single, amortized mortgage running from 80 to as high as 95 per cent at 4½ per cent interest without the necessity of any sort of Government guarantee. The terms are significant because they indicate that an equity running from 20 per cent to as low as five can still be regarded as good business. Suppose a five per cent equity in this country; the potential housing market would triple. But the U. S. financier quails at an 80 per cent mortgage, talks of a five per cent equity as madness. And, fundamentally, he is right. He is right because the U. S. mortgagor is not the British mortgagor. The British mortgagor is one of the best credit risks in the world, the U. S. mortgagor one of the poorest. As a social animal the average American is still unstable because he still believes in Opportunity—the kind of opportunity which will give him a better house tomorrow, or the kind of opportunity which will justify his purchase of tomorrow's home today. But the Englishman, the happily limited, happily class-conscious Englishman, buys his home as he takes his wife—for life.



International

See, from left to right, the Forefathers of Housing. Ebenezer Howard, once a Chicago court stenographer, gave England the vision of the planned community. Barry Parker, architect and planner, worked with Unwin to produce the first planned community at Letchworth, 30 years ago; his current designs for a satellite town outside Manchester are brilliantly progressive. The third man is, of course, Sir Raymond Unwin, dreamer and man of action.

Sir Raymond Unwin did not become a practicing architect until 1896 when he was 33 years old. In 1903 he and Barry Parker took hold of Howard's enormous idea of a Garden City and laid out Letchworth. Later he had a hand in Hampstead Garden Suburbs, many another showspot of English housing. During the War he served as Director of Housing to the Ministry of Munitions, joined the Ministry of Health as Chief Architect in 1919—a position which enabled him to direct much of the subsidized housing of the second decade. In 1929 the age limit retired him from this position, but he continues as a potent Technical Adviser to the Greater London Regional Town Planning Committee.

Unwin is undoubtedly one of the great men of his age, and next to the practice of architecture—at which he excels—his most valued talent is that of organization. Unexpectedly he backs up a high and mildly Red idealism with a smooth-working facility at committee wrangling. The Royal Institute of British Architects likes to announce from time to time that he was one of the greatest presidents in their history. More recently, he earned the undying gratitude of the entire building industry for his work in organizing the Building Industries National Council, and serving as its first president (see p. 229).

Herbert A. Welch, partner of the firm of Welch & Lander, is the only English architect of considerable reputation who has designed speculative houses in the low price class, largely to prove to himself and others one-half of his favorite aphorism: "Cheap houses need not be mean, nor expensive ones vulgar." Architect Welch aside, the British building boom has meant little to architecture nor architecture to it, save in the offices of the larger Local Authorities, whence has come some of the best and most original work of the decade. Dean of Local Authority architects is *Edwin Paul Wheeler,* in charge of housing for the London County Council. Handicapped by rulings which sharply confine his choice of materials he designs conservative structures in brick. *Lancelot H. Keay* is Liverpool's 53-year-old Director of Housing. Keenly alive to the sociological implications of housing, he disagrees with Unwin, believes the huge flats are a necessary component in the solution. *Leonard Heywood* supervises the world's most ambitious example of town planning—a 5,700 acre satellite town outside Manchester. He strongly believes that good housing makes good tenants. In Leeds shy, dynamic *R. A. H. Livett* has adopted the Mopin system of prefabrication in concrete, and is busily turning out about 70 houses a week.

BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

CONTENTS

Builder, Mortgagee, Manufacturer, Realty Man, and Buyer Meet 4000 Times on Long Island 234

Remodeling for Profit 240

An Intense Publicity Program Brings Building Prosperity to Los Angeles 244

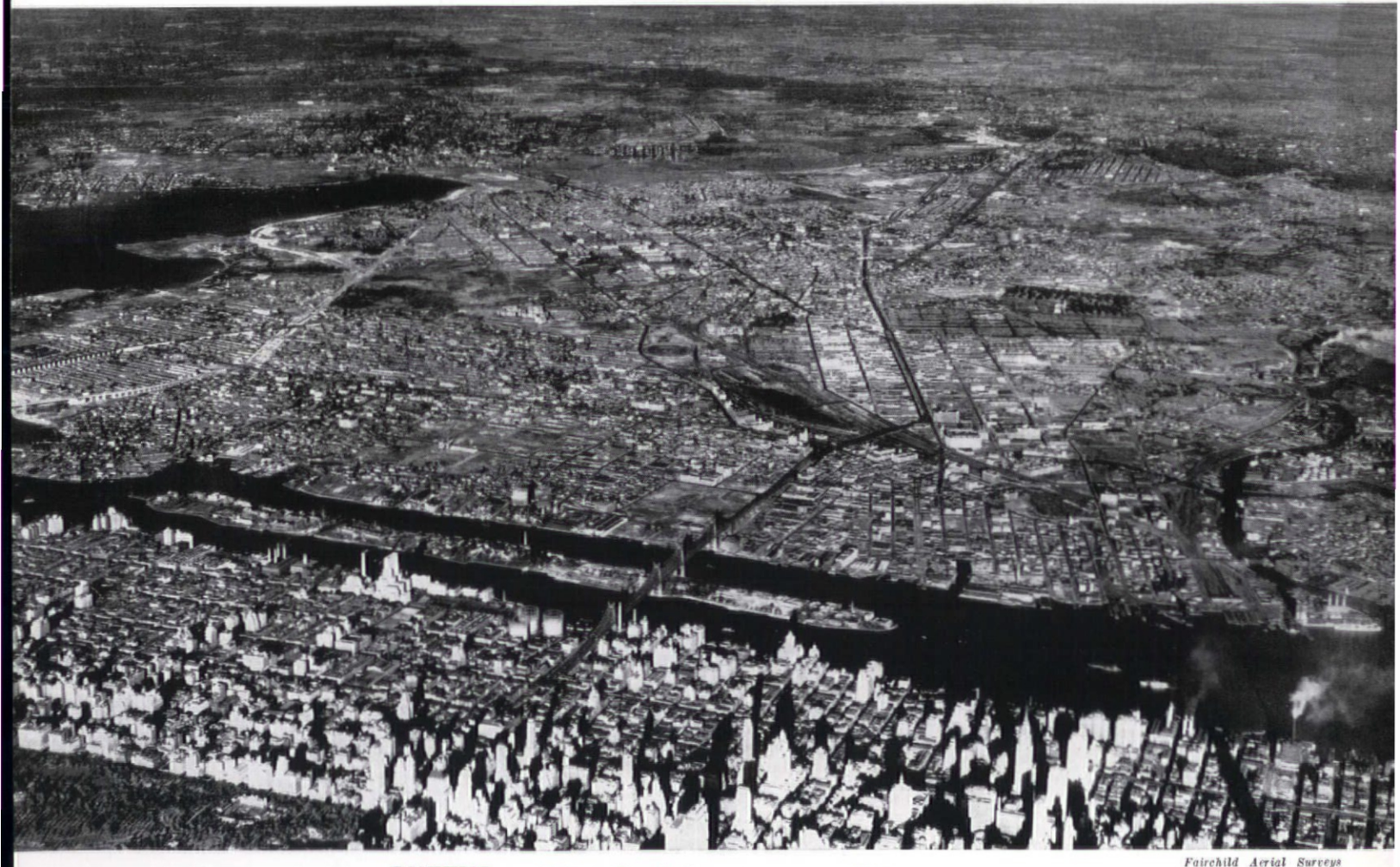
The Rent-to-Income Ratio Falls Down Under FHA Scrutiny . . . 244

Foster Gunnison Again Tries His Hand at Prefabrication 248

The Building Month in Pictures 254

Charts 256

PWA's Biggest Housing Project 36



Fairchild Aerial Surveys

QUEENS — below, Manhattan **(see page 234)**

ONE HOUSE EVERY HOUR

is the sales record that Queens, L. I., has maintained for the last ten months. A case history of the Boom in Microcosm, and its protagonist, the buyer.

LAST month the Mortgage Conference of New York, statistical clearing house for that city's mortgage lenders (ARCH. FORUM, March, 1934, p. 238), issued a 45-page report of every house built from September 1, 1935, through July 31, 1936, in Queens, Long Island. Listing every major characteristic of the new building, the report was deeply significant because it afforded the building industry its first microscopic cross-section of the Boom of 1936. Which is not to say that the national boom is a literal multiplication of the boom in Queens; but rather that the boom in Queens is large enough and varied enough in character to show the full skeleton of the adult specimen.

To give them orientation, the Conference statistics on building have been prefaced by a Guide to Queens. To give them substance they have been followed by maps and pictures of Queens a-boom. And to give them sense they have been followed also by an examination of the men and women and children whose needs and desires created the report. This examination is derived from a survey conducted independently by THE ARCHITECTURAL FORUM in the belief that the most important factor in the rising market of 1936 is not the product, not the merchant, but the buyer himself.

QUEENS: THE BOROUGH

AT THE western end of Long Island, hard by the Atlantic shipping lane and just across the East River from Manhattan, lies Queens, one of New York City's five boroughs. It is a five-sided spate of sandy soil, with two of its sides facing water, and its area is about 100 square miles, every inch of it flat. Whatever beauty it possesses has been made by hand, by draining of swamps, by planting trees, by clearing beaches. From its dirty western waterfront to the meadows that roll right down to parts of the North Shore, it provides every kind of work, from watchmaking to truck farming.

Parts of Queens are as compactly populated as any district in the country: Astoria has a density of 33,297 persons per square mile. Other areas are as sparsely settled and as restricted as Cleveland's Shaker Heights or Chicago's Lake Forest. But it is predominantly a district of homes. Of the 280,000 families in Queens, 126,000, or 45 per cent, live in their own homes. This is about six points higher than the national average as disclosed by the Real Property Inventory of 1934.

At the turn of the century Queens was little more than the paper-littered picnic grounds of its neighbor borough, Brooklyn, and it began life as a subdivision for homes. From the pink-plastered apartments of the Bronx, from the brownstone walk-ups of Manhattan, and from the elegantly named boarding houses of Brooklyn came couples, mostly couples with children, in search of more room, more air, more sun, green grass, and trees. The War stopped the migration, but in the Twenties the home buyers spilled out over the old lines, and fanned out into the strong-tufted dune grass in subdivision after monotonous subdivision.

There are 1,079,129 people living in Queens, more than in Cleveland, Ohio. Only four cities in the country, outside of New York, have a bigger population. They are rich, they are poor, these people. They live in Little Neck, and move with the very wealthy set of young socialites on Long Island's swank North Shore. They play polo, a very few of them. Quite a few more sail, in Little Neck Bay, out on the Sound. More likely they are content to slip down to the Rockaways, in their own county, for an ocean swim, or even outside their bailiwick to Jones Beach.

And in some cases they never will do even that. They will struggle along on the smallest of pittances, this minority that lives maybe in Long Island City, under the elevated railroad tracks, this minority that lives in frame houses, out on the marshy land of South Laurelton. They will be evicted for non-payment of rent or mortgage interest, and when they are they will yell to the skies, and throw flour and pepper on the eviction officers from the second-story windows of their two-family houses in Sunnyside, "low rent" gesture of the City Housing Corp. They will complain bitterly, and a very few even write vituperative letters to the papers about the noises of World's Fair construction by night, noises that keep them awake in their beds on the outskirts of Flushing.

They seldom go to the two race tracks, Jamaica and Aqueduct, hard by their homes, nor to the one, Belmont, just over the county line. Some of them go to Forest Hills to watch the National Amateur Tennis champions crowned; many of them crowd the numerous golf courses. They are, in general, white collar commuters to New York. These thousands of people form a conglomerate group which, in the mass, shows a high percentage of home ownership and higher standards of living.

The people of Queens in the aggregate have a purchasing power slightly above average. Their average annual expenditure runs about $4,500, their median expenditure about $3,800. They own nearly 170,000 cars, and they buy about 18,000 new ones every year. They have over 200,000 radios, and 125,000 residence telephones. Although Queens ranks fourth in population among the five boroughs of New York, it ranks third in savings deposits ($150,000,000), third in wholesale net sales ($200,000,000), third in retail net sales ($400,000,000). The average deposit in a Queens savings bank runs slightly over $500—a high figure. But Queens residents do most of their working and shopping in other boroughs, especially in Manhattan and Brooklyn.

Their buying habits as home owners are reflected in the net sales of leading wholesale groups: $45,000,000 by the 48 food stores, another $45,000,000 by the 32 groceries and food specialties stores, $14,000,000 by the 11 furnishing and furniture stores. Net sales of the retail trade approximates $414,000,000 a year.

Considering that the greatest retail problem is to supply material for the home and food for the residents, Queens is a fairly self-sufficient community. The three leading industries are, in the order named, bread and bakery products, furniture and fixtures, paints and varnishes. These industries do from $16,000,000 to $34,000,000 worth of business a year.

QUEENS: THE BOOM

IN THE borough of Queens, some 9,200 family quarters have been or are being built. Many more again are planned for erection this year. These homes are significant for countless reasons, but chiefly because they are what is making Queens the most highly concentrated expression of the Building Boom in the U. S. today. This analysis is culled from a survey which covers every new house erected since September, 1935.

Building. That portion of the U. S. boom in building which has already appeared demonstrates that it is to be residential in character. For this reason, Queens has been a particularly sensitive barometer

to construction activity, frequently leading the nation in monthly construction reports. From September, 1935 to July, 1936 inclusive, there were built or under construction in Queens:

4,363 single-family houses
201 two-family houses
90 apartment houses

These houses and apartments together afford 9,186 family quarters. In addition, there are further contemplated (*i.e.*, announced *in good faith* in already active subdivisions) 7,251 single-family houses and 133 two-family houses. The locations of these houses are indicated on the map on page 236, where the dots serve to locate subdivisions rather than houses.

Price. The boom in Queens is centered around the $5,000 house. Notice in the table below that the largest price class is $4,500 to $4,999. This figure, of course, includes land. Forty per cent sell for less than $5,000; 80 per cent sell for less than $6,000; 60 per cent sell for between $4,500 and $6,000. Thus:

Price	No. of Houses
Below $3,500	131
$3,500–$3,999	213
4,000– 4,499	273
4,500– 4,999	879
5,000– 5,499	705
5,500– 5,999	695
6,000– 6,499	413
6,500– 6,999	171
7,000– 7,499	49
7,500– 7,999	71
8,000– 8,499	24
8,500– 8,999	40
9,000– and over	33
	3,697

A widespread practice among subdividers this year in Queens has been to advertise a cover-all "subdivision price." Quite often this price will be found to apply only to a so-called "standard model," —deviations from which are frequent and always manage to raise the final cost.

Financing. In Queens a great many prospective home buyers are asking: "Are your houses approved by the FHA?" They have seen advertisements in the Press and on billboards; whether they know what FHA insurance constitutes is beside the point. They know it guarantees some standard. So at least 65 per cent of Queens' 256 subdividers have been forced to qualify for FHA insurance.

In New York State qualifying standards are so simple that almost any house-a-day subdivider can get approval. He usually advertises it, so that now the advertisement has become to discriminating builders a token of sub-standard work. Substantial builders, although they may have FHA approval, currently refuse to advertise it.

Since FHA approval implicitly means amortization, Queens buyers are getting that method of financing. Rarely do they get FHA insurance. The subdivider may have tipped them off to FHA's slightly greater expense, or he may merely not wish to go to the trouble of getting the insurance. At any rate, although more than half the subdivisions are qualified to receive it, less than 20 per cent of the new homes in Queens carry FHA insurance.

Usual terms of sale are 20 per cent cash, with an 80 per cent 20-year mortgage. Monthly payments, including insurance, taxes, and water, are about $10 per month per $1,000 of mortgage. Even after allowing an additional $10 a month for heating, the actual cash outlay by the owner, after the initial 20 per cent, is usually less than $50 per month for a six-room house. This is at the rate of from $8 to $9 per room per month.

Consider the specimen terms below. In view of the fact that an average monthly reduction and savings on the first mortgage of $18.30 is being paid on this imaginary six-room house, the owner is really paying less than $6 per room per month. The boom in Queens is truly cheap:

Cash on Contract	$ 550	
Cash on Title	548	
FHA-20 yr. mortgage	4,392	
		$5,490
Mortgage payment	$32.63	
Taxes (approximate)	8.25	
Insurance	.49	
Water (approximate)	1.25	
		$42.62

The money back of the boom in Queens is coming in large part from savings and loan associations. For those institutions supplying most of the backing, see the table below. The number refers to developments financed. Only two of these are having the FHA insure all mortgages:

American Cooperative B. & L. Assn.	2
Baldwin Natl. Bank & Trust Co.	12
Columbia B. & L. Assn.	2
Dime Savings Bank of Brooklyn	2
Flushing Fed. S. & L. Assn.	17
Fourth Fed. S. & L. Assn.	10
Guaranteed Title & Mortgage Co.	8
Hudson County National Bank	2
Inter-County Title Gty. & Mtg. Co.	5
Ninth Fed. S. & L. Assn.	5
Prudential Insurance Co.	5
Queens Co. Fed. S. & L. Assn.	3
Railroad Fed. S. & L. Assn.	2
Serial Fed. S. & L. Assn.	17
N. Y. Edison S. & L. Assn.	13
West Side Fed. S. & L. Assn.	10

Architects. A breakdown of some 7,800 homes, some fact, some still fancy, was made, with the usual esthetically discouraging results as to materials and type of "architecture." Of 159 developments, 122 had benefit of architects. But look closely and the weaknesses become apparent. Architect Arthur E. Allen must, judging from developers' advertising, have "designed" thousands of these homes. Actually Architect Allen probably drew up floor plans, giving his houses the benefit of compact arrangement, little else. Builders made their own elevations, interpreted exterior design on the job, perhaps changed the plans to suit contingencies, certainly got scant architectural supervision. Architects Allen, Joseph Unger, S. M. Palm, and J. E. Cahill "designed" the houses for 67 developments in Queens, a task which should have taken ten times the ten months from September, 1935 to July, 1936.

Houses. The great majority of these swiftly flowering dwellings are hybrid types.* Hundreds built and contemplated combine stucco, half-timbers, brick veneer and stone. Overwhelming favorite for roofing is slate. Those of wood frame construction constitute some 83 per cent of a total which will probably reach 8,350 houses before this time in 1937.
By percentage:

Brick veneer: 28 per cent.
Brick veneer and stucco: 20 per cent.
Brick veneer and stone: 17 per cent.
Brick veneer and combinations: 18 per cent.

Placing these skin surfaces by developments:

Brick veneer: 48 developments.
Brick veneer and stucco: 20 developments.
Brick veneer and stone: 14 developments.
Brick veneer and combinations: 25 developments.
Solid brick: 13 developments.
Brick and stone: 4 developments.
Steel frame houses: 5 developments.

Most of these houses lack insulation. Generally speaking they can be divided into two categories: the one-story five-room bungalow and the two-story, six-room-and-bath house. The number of rooms has no apparent relation to the price. Six-and-a-half rooms may cost anywhere from $3,000 to $9,000 (see p. 238). The one-pipe system of steam heating is the rule, while oil burners are frequently advertised but rarely installed without additional charge.

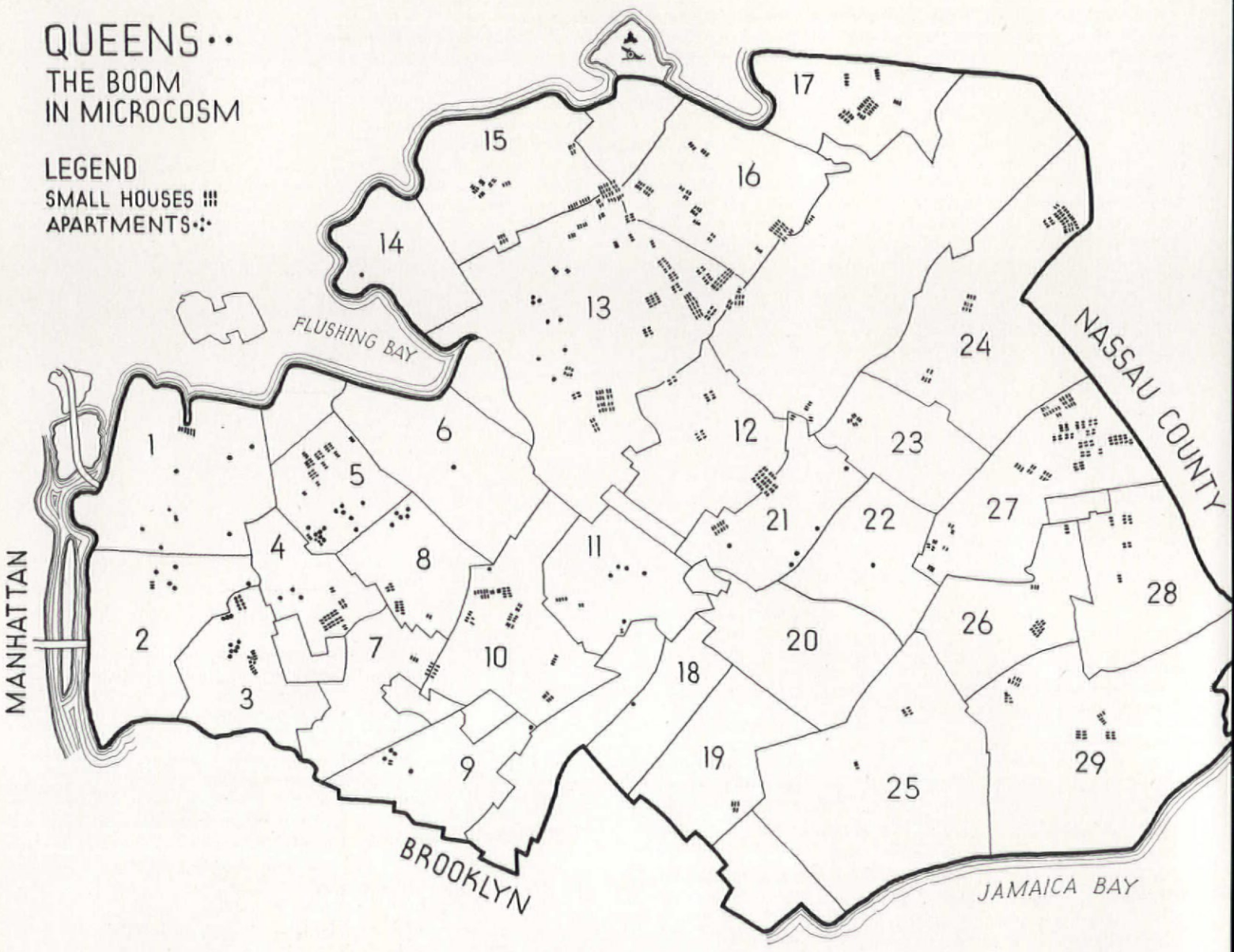
Builders. The Queens boom is definitely a builder's boom. Which is to say that it is the speculative builder himself (rather than the architect or the financier or the material manufacturer) who initiated construction. He did it for any number of unscientific reasons: Because the proportion of young married couples among his buyers last year had increased, because his friend had made money, because he "had a hunch," because he builds homes every year anyway. No sooner had the boom been spied early this spring than the number of builders jumped way up, flooding the market with poor construction, dividing it too many ways for comfort. However, the old-line builders, like Gross-Morton, Rose, and Hub Homes have retained a lion's share of the business.

The large builder in Queens deals almost exclusively with the manufacturer of materials, leaves the jobber to sell the little builder. He rarely uses union labor, likes "lumping" his contracts—a method whereby he supplies the materials and a fixed sum for the completion of a subcontract.

*Not included: 90 new apartments.

QUEENS··
THE BOOM IN MICROCOSM

LEGEND
SMALL HOUSES
APARTMENTS



The Borough of Queens has, for the purpose of this map, been divided into 29 districts by name and number, together with the number of houses built and contemplated:

1. ASTORIA: 41 b, 66 c*
2. LONG ISLAND CITY: 11 b, 0 c
3. SUNNYSIDE: 33 b, 0 c
4. WOODSIDE-WINFIELD: 333 b, 137 c
5. JACKSON HEIGHTS: 205 b, 172 c
6. CORONA: 0 b, 0 c
7. MASPETH: 80 b, 90 c
8. ELMHURST: 101 b, 167 c
9. RIDGEWOOD: 4 b, 0 c
10. NASSAU HEIGHTS: 206 b, 117 c
11. FOREST HILLS: 19 b, 0 c
12. FLUSHING SOUTH: 66 b, 24 c
13. FLUSHING: 591 b, 962 c
14. COLLEGE POINT: 0 b, 0 c
15. WHITESTONE: 479 b, 327 c
16. BAYSIDE: 385 b, 1220 c
17. DOUGLASTON-LITTLE NECK: 229 b, 222 c
18. WOODHAVEN: 0 b, 0 c
19. OZONE PARK: 29 b, 71 c
20. RICHMOND HILL: 0 b, 0 c
21. JAMAICA: 53 b, 68 c
22. SOUTH JAMAICA: 25 b, 28 c
23. HOLLIS: 18 b, 30 c
24. QUEENS VILLAGE: 123 b, 0 c
25. HOWARD BEACH: 58 b, 370 c
26. SPRINGFIELD: 187 b, 156 c
27. ST. ALBANS: 591 b, 658 c
28. LAURELTON-ROSEDALE: 70 b, 409 c
29. SOUTH LAURELTON: 71 b, 440 c

*b = houses built or under construction, September, 1935, to July, 1936. c = houses contemplated for the near future.

FOR INSTANCE:

1. In the Twenties, the population of Astoria soared by some 75,000, making that district the most thickly populated in Queens. Its 126,000 people, who make up a greater city than Wichita, Kan., or Fort Wayne, Ind., live largely in apartment buildings and six-family houses. Extending in area over 3.77 square miles, Astoria has a population density of 33,297 per square mile, with a foreign-born population half as great as native-born, the German and Italian nationalities predominating. The recently completed Triboro Bridge is expected to create some real estate stimulant, but it is doubtful whether this will be powerful enough to offset the current migration further away from Manhattan. The residents are of lower-middle class, with an average annual spending power of about $3,500. Only 6,800 of the 33,468 families own their homes. There are over 11,000 dwellings in the district, of which only some 4,000 are single-family houses. New houses built or under construction: 41; contemplated: 66 more.

5. Jackson Heights* is 1.61 square miles in area, with a population of nearly 38,000, larger than Elgin, Ill., or Butte, Mont., or Cumberland, Md. An excellent residential district, only 3,436 of the 11,091 families own their homes. Business centers are few, most of the district being built up into relatively attractive one- and two-family houses, with a liberal sprinkling of sturdy apartment buildings. Seventy-five per cent of the population is native-born; they are upper-middle class; they average close to $6,000 a year in expenditures. The Twenties witnessed its greatest growth, the population jumping during that period from 3,000 to its present size. New developments will probably have pushed it over 40,000 in two more years. Total dwellings: 3,873. Total one-family dwellings: 2,015. At present Jackson Heights is coming in for its share of Queens' subdivision. New houses built or started: 205; contemplated: 172.

11. Forest Hills is one of the wealthiest residential districts in Queens, stretches over 2.15 square miles, has a population density of 10,860 per square mile. Its inhabitants number over 23,000, more than there are in Ashtabula, Ohio, Glen Falls, N. Y., or Boise, Idaho. In the Twenties, its population increased almost 700 per cent, but this fact does not mean as well that the houses are monotonously uniform. Forest Hills is one of the very few Queens districts where homes are architecturally varied. Estimated average annual family expenditure: $7,700. Total dwellings: 4,356. One-family homes: about 4,000. Families owning homes: 3,450 of 7,110. Foreign-born whites, of which most are English or German, constitute about 22 per cent of the population. There is less chance for the subdivider here than in almost any other Queens neighborhood, because of restriction rather than lack of space. Forest Hills is a settled community, socially reserved. Only nineteen new houses have been reported in the past ten months; no others are contemplated.

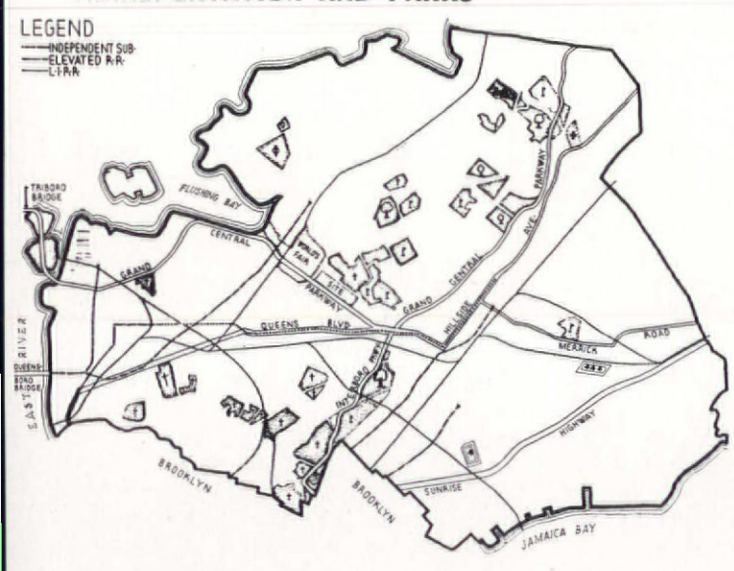
13. Flushing, a district of above average purchasing power, is one of the oldest and fastest growing communities in Queens. It has gained over 30,000 people since 1920. It forms a self-sufficient city, having a shopping center which supplies the whole north shore of the borough. Southeast, five years ago, the land was undeveloped, large tracts of it being devoted to truck farming. But today the southeastern area is rapidly being built up. Flushing is large: 7.30 square miles; it is thickly populated: 53,247, larger than Hamilton, Ohio, Fresno, Calif., or Macon, Ga. Its people are 75 per cent native-born, those foreign-born being chiefly Germans, Irish, and English. The newcomers to Flushing, however, are preponderantly Italian. The estimated annual family expenditure is above $6,000. Of the 15,000 families, more than 6,500 own their homes. Of the 9,000 dwellings, more than 7,500 are one-family homes. Flushing today is the most subdivided area in all Queens, 591 houses having been started or finished in the last ten months, with plans for 962 more afoot.

16. Bayside is an excellent residential community, recently discovered by Gross-Morton (Feb., 1936, p. 37, Arch. Forum). This discovery has meant for Bayside, in the past ten months, most of its new homes, will mean in the future most of its contemplated homes. In 1920, about 4,000 people lived on this pleasant plateau overlooking Little Neck Bay; by 1920 the number had grown to 15,000, more than in Palo Alto, Calif., Charlottesville, Va., or Portsmouth, N. H. There is still considerable undeveloped property in Bayside. The area has no industries, little commercial activity. It extends over 3.03 square miles. Over 3,000 of its inhabitants are foreign-born, Poles, English, Germans, and Italians leading in the order named. Of the 3,598 families, upwards of 2,300 live in their own homes. Total dwellings: 3,106. One-family homes: 2,829. New homes built or under construction: 385. Contemplated: 1,220.

29. South Laurelton presents problems to the Queens subdivider. It is the most sparsely populated (980 per square mile), and therefore eminently suited for development. Yet most of the land is salt marsh and must be filled in. There are no industries, few stores within the district. Cellars of most of the new homes are but a few feet above high tide level, eliminating chance of FHA-insured mortgages. As a result, subdividers as a rule did not dare exploit the area. Practically all homes are one-family frame houses in the $2,500-$4,500 price range, and 1,100 of 1,500 families own their own. The families of South Laurelton spend less than $3,100 a year. Their breadwinners are policemen, postmen, elevator operators, mechanics. Foreign-born constitute less than 20 per cent of the population, which is close to 6,000, more than in Auburn, Ind., or Las Vegas, Nev., or Berea, Ohio. Now, with the boom, subdividers are choking down their qualms. Result: 141 houses built or under construction during the last ten months, 849 contemplated for the near future. Price range: roughly the same as those previously constructed.

* Population figures and estimates of pre-boom dwellings erected and owned in all districts are based on 1930 census.

TRANSPORTATION AND PARKS



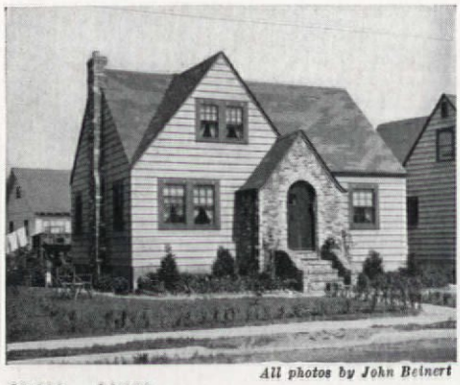
All three of New York City's subway lines serve Queens, as does the Long Island R. R. Besides these main transportation arteries, the borough is interlaced with a set of excellent highways, some of which are at present being improved. Bus lines and trolley car lines likewise fan out over the borough. Queens has its full quota of parks, cemeteries, and golf courses. Some of the latter are at present disappearing due to high-pressure developments (cf. Gross-Morton in Bayside), but the people of Queens need not fear for lack of trees and grass for some decades.

WEALTH AND POVERTY



Wealth in Queens is distributed in curving belts through the middle and at the top of the borough. Forest Hills and Jamaica, Whitestone, Bayside, and Douglaston-Little Neck are the richest areas, with the money belt extending on out beyond Douglaston-Little Neck to Long Island's swank North Shore, where polo ponies prance and the younger socialites spend their off-seasons. These people spend from $5,000 a year on up. To the west and south are the industrial slum districts: for this reason Long Island City is poor. To the southeast is marshy land, meaning lack of sustained development. People here spend less than $3,500 a year.

QUEENS: THE HOUSES — Where six-and-a-half rooms cost both $3,000 and $9,000.



All photos by John Beinert

$3,000 — $4,000

This house is in South Laurelton. The marshy ground of this district has made FHA-insured mortgages impossible; curiously, the owners are cheerful when they show you the water leaking into their basements. In this development, called Jamaica Gardens, there are houses at two prices, $2,290 and $3,500. This one is of the latter class, has 6½ rooms, is of frame and clapboard construction. Builder H. L. Scholer advertises supervision by Architect Alex MacLean. The mail carrier who lives here has four children, needs the three bedrooms. His salary: about $42 per week. Other home-owners here, living in the less expensive homes, may earn as little as half that amount.



$4,000 — $5,000

These houses are in Jackson Heights, are built by the Guterman Brothers, and are advertised as products planned by Architects A. E. Allen and S. M. Palm. Their products cost $4,290, with monthly carrying charges of $32.17. They include 5 rooms, 1 bath, a built-in one-car garage, an oil burner. Of brick veneer construction, they are 1½ story one-family attached houses. Bath and kitchen are tiled. The patrolman, who lives to the right, is married, has no children, probably earns $50 per week. The Guterman Brothers are building all over Jackson Heights, usually in small units. This development includes only one other pair of attached houses, as yet uncompleted.



$5,000 — $6,000

This house in Nassau Heights is one of a series of "Budget Homes." They are fully detached, have 6½ rooms, and cost $5,390 and $5,590. Most of them are financed by mortgages from the Fourth Federal Savings & Loan Association, although in a few cases the owners are employes of the New York Edison Co., which has taken over the mortgage. These houses suffer from a common disease of Queens subdivisions: rock-rash, in which rocks appear among the bricks according to some incomprehensible design. The end house in this 80-house development is occupied by a skilled electrician, married, with no children. His salary: between $50 and $60 per week.



$6,000 — $7,000

Above is a house located in Middle Village, near Maspeth. It is one of a line of fifteen, each almost exactly alike, only variation appearing in the blending of stone and brick around the door. Stone, brick, stucco, half-timbers, and frame are all used as materials, with the ubiquitous slate roof crowning the whole. The developer did little to help out his clients in the way of landscaping, but from the many nearby nurseries come salesmen with plants, arriving two weeks later with "plant medicine" to restore the dying shrubs "green as new." In this house: 6½ rooms; price: $6,350. In the family: father, mother, one child. Salary of the father: less than $40 per week.



$7,000 — $8,000

This home is typical of the very small minority in new Queens houses: it is attractive. One of a group called the "Priscilla Homes," it is in South Jamaica, was built by Schmidt & Nasse from plans drawn up by Architect Arthur Fahr. Of two-story brick veneer, it has seven rooms, two baths, a two-car garage, oil burner; stall shower, extra lavatory. It sells for $7,750. Others cost $700 more. The Queens County Federal Savings & Loan Association made a loan of approximately $5,600 in this case. These houses are in a restricted residential neighborhood. Although occupied as recently as April 15, they already, through landscaping, seem settled and comfortable.



$8,000 — $9,000

Here is one of the Lorber Homes in a development on the skirts of Flushing. Houses in this development are expensive enough to warrant an individuality which allows of one Colonial clapboard house, occasional pink stucco. As in 95 per cent of the new Queens houses, the people that live here answer a doorbell which is a two-toned chime. Brick, stone, and stucco are the staple materials of the development; tile roofs predominate. The rental agent assures you that each house has received architectural attention, that most carry FHA-insured mortgages. This one has 6½ rooms; cost: approximately $9,200. In it live husband, wife, two children. Earning power of husband: $100 per week.

QUEENS: THE PEOPLE—They make from $25 to $80 a week.

In the equation which is the Queens building boom, by no means the least important term is the people. Builders can build, there can be money to lend, but a fundamental prerequisite remains in the spirit of the people, these people nearly half of whom have left the neighborhood of their jobs, of their friends, of their families, and have settled in a strange land.

Examine a stratum of these new owners of homes and you discover that a vast majority used to live in apartments, elsewhere in Queens or further away. The chances are good that they moved out of a crowded unit in which they lived two and three generations together. Ask these people why they bought their homes, and they are apt to slip into the conventional excuse: Air, grass, sunshine. Nearer to the truth, perhaps, is that they were tired of paying rent and tired of living close.

They come, these pioneers, 50 per cent from the districts near Manhattan: Long Island City, Astoria, Sunnyside, Woodside, and western Jackson Heights. Another 25 per cent have moved up from Brooklyn. The others come directly from the Bronx or Manhattan, a scattered few New Jersey and upstate New York.

These purchasers are from every conceivable walk of middle and lower-middle class life. The new homes that are mushrooming in South Laurelton, the relatively poorer district of Queens, are owned by elevator operators, letter carriers, mechanics, electricians, bank guards, museum attendants, people with salaries that range from $25 per week on up to perhaps twice that sum. And in the more expensive subdivisions, like the Lorber Homes in Flushing, the owners are from a white-collar, proprietary class: they are hotel managers, restaurant owners, dentists, supervisors in the Telephone Co., furniture manufacturers, earning upwards of $80 per week.

The intermediate class, living in Nassau Heights, Jackson Heights, or Flushing, includes factory foremen, skilled laborers, such as mechanics and telephone company linemen, white collar workers, such as auditors, clerks and civil service employes, a stock clerk for the Brooklyn-Manhattan Transit Co., a truck driver for the Tydol Gas Co., letter carriers and policemen, even a few professional men, such as doctors, lawyers and dentists.

These men are the heads of families which may include as many as six children, average about two. Their children are young, usually under twelve. The parents are generally in their late thirties or early forties, and are living in their first owned home. Their homes will be old before their children reach their majority.

But before their homes are old, they will be paid for in full. The home owner of today buys homes which have amortized mortgages, and he likes the arrangement. It may mean more trouble to him, but he comprehends its eventual worth. He has but two standards for his house: What does it cost? Is it approved by the FHA? He knows nothing of its construction, but he usually wants FHA approval. Which is why the majority of the 256 Queens subdividers have been forced to qualify.

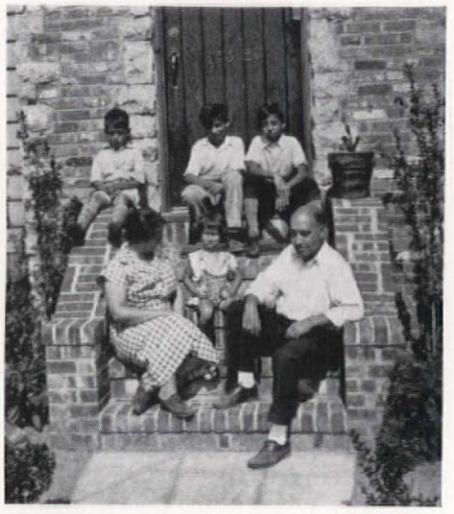
Some of these people, to be sure, are gambling. A housewife in Nassau Heights frankly admitted that her $6,350 house was a proposition that was going to mean many a sleepless night for her and her husband. She was quick to say that she did not know whether they would be living there when the mortgage was paid off. There are some, especially in the inexpensive South Laurelton district, who fervently wish they had FHA insurance. "It's a better corporation," they observe sagely, shaking their heads.

Most of these Queens pioneers are revealed as frugal in more ways than one. Nearly 85 per cent of them own cars, but their cars are Fords, Chevrolets, Pontiacs, or 1928 Packards, 1929 Studebakers, and 1929 Auburns. Little more than 12 per cent have 1936 models, and these new cars are all in the lowest price class. Almost all of them own radios, the great majority read the tabloid New York newspapers.

Consider the people pictured on this page. Frank Sergio, who lives in South Laurelton and has three boys and a girl, is a letter carrier earning about $40 per week. Tired of paying rent, he decided to buy his own home. He came from the Bronx, where his large family had lived in one flat. His occupation keeps him from afternoons off, so there is little point in his owning a car. His is one of the more expensive South Laurelton homes ($3,500) and he is satisfied with it.

Mrs. Nora Snow, who is pictured with Sales Agent Harry I. Sherwood (no member of the household), is married to an American Express clerk who earns approximately $40 per week, lives in a $4,450 home in Jackson Heights. A placid soul, she is more friendly than most of her new neighbors, who have retreated firmly within their homes to avoid the dozens of salesmen who swarm over these new developments every day. She and her husband, who are childless, own a 1933 Chevrolet, came from Astoria because they wanted their own home. Mr. Sherwood has reasons to look unworried. Of the 24 houses in the development, only one remains unsold.

Thomas Ward, standing on the steps of his Middle Village house with his wife, is a clerk for the B.-M. T. His V-8 Ford was new this year. He and his wife and child only this last spring moved out of a six-family house. Owner of a medium-priced house ($6,350), earner of a medium-range salary (about $35 per week), he stands, squinting into the sun as it sets between the Chrysler Building and the Empire State Building, half an hour away in Manhattan. He and his house typify the Boom in Microcosm.



Frank Sergio, father of four, moved from a flat in the Bronx because he was tired of renting.



Mrs. Nora Snow bought one Jackson Heights home; and Agent Harry Sherwood has only one more to sell.



Thomas Ward and his wife: from a six-family house to a six-room house.

A Famed Cleveland Restaurant...

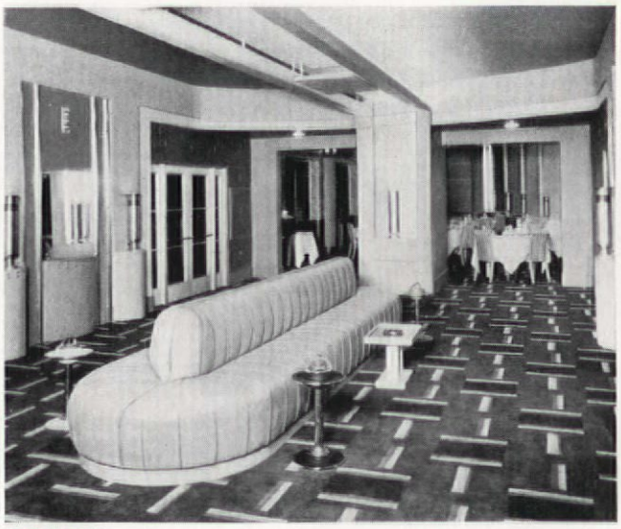


NEW VOGUE ROOM

In Cleveland, patrons of the Hotel Hollenden had for years dined in the ornate Crystal Room, where decoration ran to heavy curtains, elaborate chandeliers, dark rugs, and a heavily overlaid ceiling. Architect Oscar Nordstrom sat in that room once, left to convince Owners DeWitt & Associates that it should be remodeled. His commission entrusted Pereira & Pereira of Chicago with the interior decoration. Elimination of heavy horizontal lines and the substitution of a modern, flush ceiling for the old arched type achieved an effect of uncrowded and clean-lined space. Cost of remodeling, including the lounge and bar: approximately $100,000. Average daily income of the dining room before remodeling: $135. Average daily income after remodeling: $412. Average daily income of the new Parisian Bar: $500.

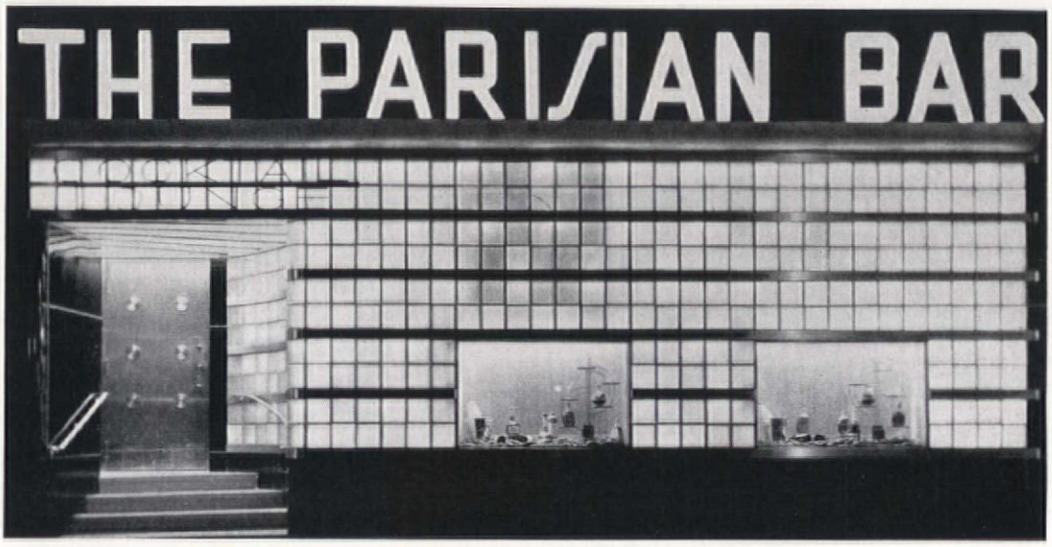


OLD CRYSTAL ROOM

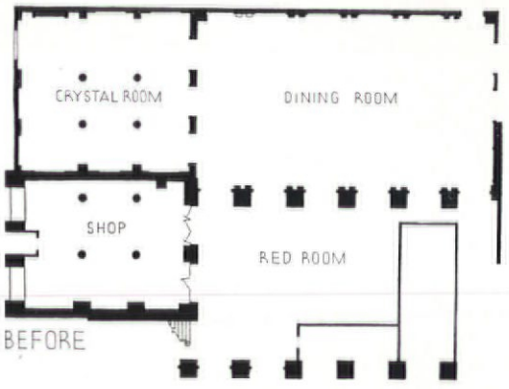


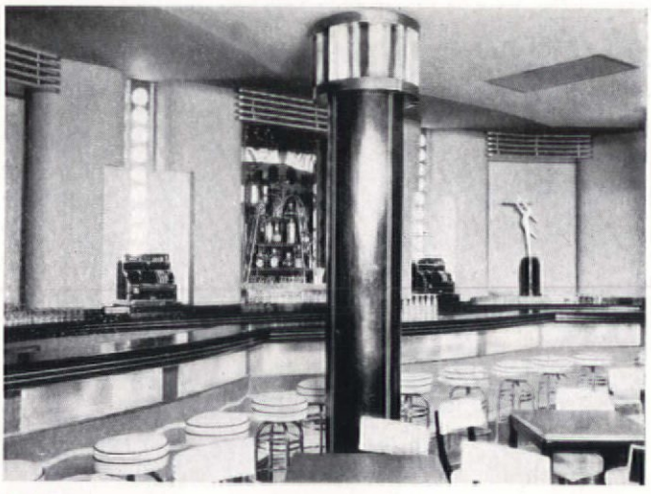
FOYER

. . . Gets a New Face

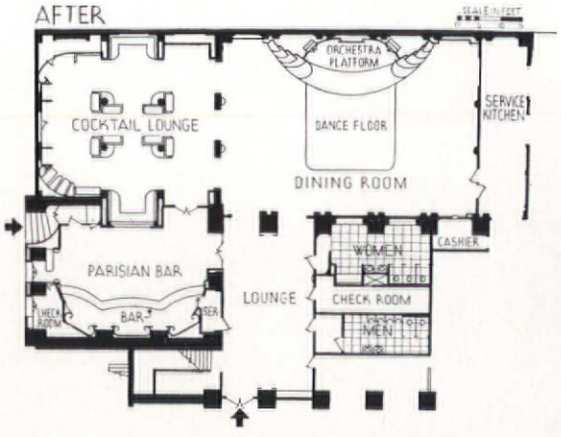


BAR EXTERIOR





BAR



Completely new are the bar and cocktail lounge, now a major source of income. The problem of circulation through the often crowded bar has been well solved. The addition of a service kitchen to the dining room is a practical investment



VOGUE ROOM FROM LOUNGE

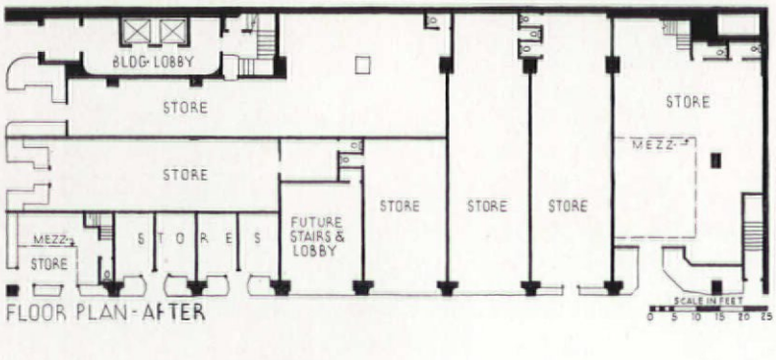
Smaller Rental Units Fetch More Tenants



Ph. B. Wallace

AFTER

For three long years, vacancies made of the Perry Building a heavy and gloomy Philadelphia landmark. Architects Edwin H. Silverman & Abraham Levy elected to enhance rental prospects by making seven shops out of an automobile showroom, in general creating space for many small stores where a few imponderables, like the former large automobile showroom, had been before. The facade for these stores was made uniform the length of the block, and the old, heavy masonry removed. Although sandblasting sufficed for the upper stories, the lower two floors were given a smooth stone face, and the ornate wrought-iron balconies reduced to their simplest terms. Basement, ground floor, and second floor were all vacant for three years preceding alterations, bringing in no income. Rents on these three levels since remodeling: $90,000 a year. Assessed valuation before remodeling: $1,186,200. Taxes: $34,687.50. Cost of remodeling: $140,000.



FLOOR PLAN - AFTER



Edgar Lloyd

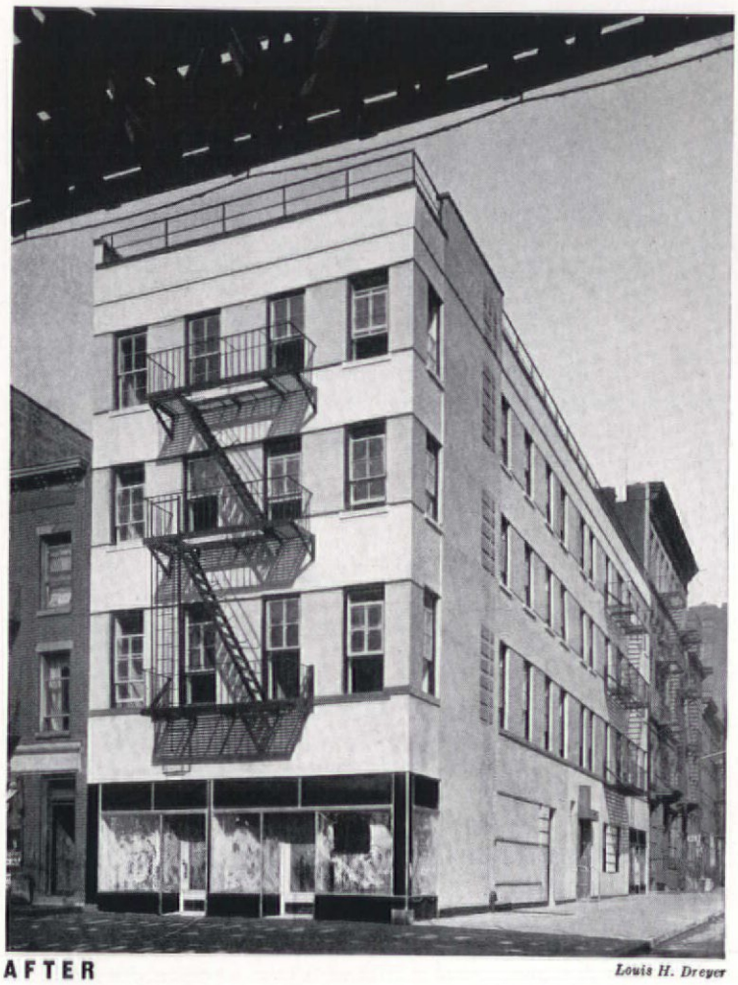
BEFORE

A New Plan Trebles Profits



BEFORE

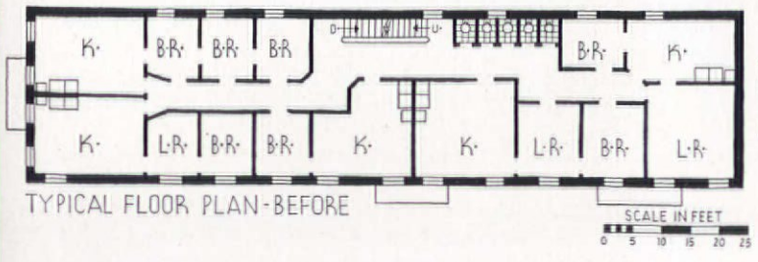
Albert Rothschild



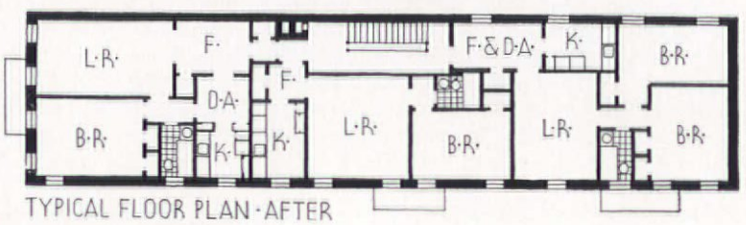
AFTER

Louis H. Dreyer

Manhattan's Excelsior Savings Bank retained for the remodeling of this slum property Architect J. M. Berlinger, whose office has remodeled upward of 100 properties in New York during the Depression. The original floor plans show the over-size kitchens, the minute living rooms, the long corridors, characteristic of the old tenement. In remodeling, the concentration was reduced from five to three apartments per floor, and all room sizes were considerably increased. All useless corridor space was eliminated, the toilets were placed within the apartments rather than concentrated over a single main, and the kitchens were reduced to a size commensurate with their use. Heating was installed. On the exterior astonishingly good results were obtained by a judicious use of paint, elimination of signs, little else. Rents have risen from $4.50 to $15 per room per month. Mortgage at foreclosure: $16,000. Rents at foreclosure: $1,822.50. Cost of remodeling: $20,000. Rents after remodeling: $5,400.



TYPICAL FLOOR PLAN-BEFORE



TYPICAL FLOOR PLAN·AFTER

LOS ANGELES' $100,000,000

worth of building permits represents a 15-month record achieved by ringing doorbells and corralling cinemagnates.

In 1933, Los Angeles, like every other U. S. community, was hobbled by the Depression. During that year, 18,059 permits were granted for various kinds of building construction, amounting in volume to $15,283,216.

In 1934, Los Angeles was still bogged down by the Depression, built only $14,591,595 worth of new construction on but 17,908 permits.

In 1935, the volume of new building in Los Angeles had soared to $71,044,000. In the fifteen months from February, 1935, to June, 1936, permits totaling in value $104,624,288 were issued in Los Angeles County, which during that period was a consistent country-wide leader in volume of construction, number of permits, and value of permits. The answer to this phenomenal rise lies in the ideas and ability of a handful of men, together with the work of a group known as the Committee of One Hundred.

It was the curiosity of one James S. MacDonnell which brought about the committee. MacDonnell, a canny Scotch-Canadian who came to Pasadena 30 years ago, has since been a director of the Federal Reserve Bank of San Francisco (1925-27), president of the First Trust and Savings Bank of Pasadena, and director of the Union Oil Association of California. He has, besides a thorough knowledge of banks and banking methods, a lively interest in the financing methods of the present administration. Back in January, 1935, he decided to test them by modernizing his old Pasadena home under FHA's Title I. Gratified by the immediate response, he came to the conclusion that the new methods were swifter than the average bank loan arrangement, should be pushed to the notice of the average home owner.

He mulled the idea over with his good friend, Andrew Chaffey, likewise a banker and also from Canada. From their confabulations came the plan. They and one hundred of their friends would band themselves into a committee, pledge themselves to take advantage of the FHA in one way or another. Since all the one hundred turned out to be important employers, the scope of encouragement toward building was enlarged to include not only each committeeman's friends, but his workers as well. The one hundred were important Californians, not peewee industrialists, included such famed persons as Publisher William Randolph Hearst, Cinemagnates Louis B. Mayer, Joseph M. Schenck, Winfield R. Sheehan, and Jack L. Warner, U. S. Senator William Gibbs McAdoo, Cinema Star Harold Lloyd, Aircraftsman Donald Douglas, Publisher Manchester Boddy (*Illustrated Daily News* and *Post-Record*) and Harry Chandler (*Los Angeles Times;* Arch. Forum, June, 1936, p. 521), Banker A. H. Giannini, Merchandiser P. G. Winnett (President, Bullock's, Inc.). Notable exclusion from the list: real estate men, contractors, painters, others who might benefit directly from a boom.

Henry S. MacKay, Jr., chairman of the Los Angeles New and Better Housing Program, was commissioned to assume charge



Chairman MacKay

of the campaign's executive work, and forthwith applied himself diligently. An attorney and son-in-law of the late U. S. Senator Flint, Heinie MacKay was well qualified for the job. On January 31, 1935, the opening gun was fired when the plan was submitted to FHAdministrator James H. Moffett, who promptly waxed enthusiastic. MacKay then went to work in earnest. Goal was announced as $100,000,000 worth of building permits in 1935. With this in mind, MacKay made his first, and perhaps most astute move: he called in as publicity director Wendell "Doc" Bishop, who since carrying Los Angeles' plan to successful completion has undertaken the work of steering Moppet Shirley Temple's name over the front pages of the Press. MacKay and Bishop then went about flooding the city on billboards, in the Press, in movie trailers, on street cars, with vivid publicity of what FHA could do for the average home owner. Token of publicity success: in one day the committee and its proposals were given 26 pages of space in the local Press (not by publishers on the committee).

Nor was the value of word-of-mouth advertising overlooked. The State Emergency Relief Association engaged 750 workers for a field campaign under the auspices of the committee. The entire city from San Pedro to San Fernando was canvassed door by door. At each house the workers gave the home owners a sales talk on the potentialities of FHA, then presented a questionnaire blank to find out about construction planned. Where there seemed possibility of building, additional information was sent, and the prospective builder was encouraged to get estimates. All types of work eligible under the FHA were emphasized.

The Committee of One Hundred actually did much to cooperate. Not only did they have work done on their own property, but they raised a fund of $22,000 for necessary expenses, such as printing, publicity, salaries, etc. It is estimated that the publicity thus engineered was worth more than $500,000 to the drive.

Results, in dollar volume:

From Feb. 1 to Oct. 1, 1935	$ 51,000,000
Feb. 1 to Nov. 30, 1935	63,882,000
Feb. 1 to Jan. 1, 1936	71,044,000
Feb. 1 to Apr. 1, 1936	93,800,000
Feb. 1 to Apr. 30, 1936	104,624,288

And last month, as the committee executives released final figures on their drive, it was revealed that they had inspired another city, Detroit, to push the same plan. In Detroit a group of civic-minded citizens had organized themselves, was laying plans to duplicate the Los Angeles Million Dollar drive.

FHA DISPROVES

the theory that 20 to 25 per cent of income must go for rent.

Time-honored rule-of-thumb has been that 20 to 25 per cent of income should be spent on rent. FHA investigators, however, busy snooping out the diseases which classically affect mortgages, last month published findings which confirmed by graph and chart what many a property owner has long known by instinct: that the rent-income ratio may be honored by time but it is widely ignored in practice. Delving into data on housing expenditures and incomes of about 150,000 tenant families, the FHA was able to reach the following trenchant conclusions:

Although the average rental expenditure increases regularly with the income level, the increase is not proportionate. For example, tenants earning $2,000 annually

(Continued on page 246)

LIGHTNING STROKE MELTED WIRES . . .



. . . but could not plunge this theatre into darkness

IN all probability, the audience in this theatre in a large Eastern City was unaware of the thunderstorm outside until a bolt of lightning struck a nearby pole, cutting off the normal electric current supply. But an Exide Emergency Lighting Battery System kept the theatre lighted, preventing the danger and confusion that so often accompany such occurrences. Following is an Exide Engineer's Operating Report, made after a periodic inspection:

"During the summer, lightning hit a pole outside the theatre, burning out the transformer. The Exide Emergency Lighting System operated satisfactorily."

Architects know that the utility companies take every possible precaution but cannot control the effects of storms, floods, fires, street accidents or blown fuses and short circuits within a building.

That is why architects are specifying Exide Keepalite Emergency Lighting Systems in stores, theatres, schools, hospitals and public buildings of various kinds. Mail the coupon for Don Graf's Data Sheets, giving detailed information.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

Exide Keepalite
EMERGENCY LIGHTING SYSTEMS
$150 AND UP

Refer to Sweet's Catalog, Section 27—Page 11

WHAT IS EXIDE EMERGENCY LIGHTING?

An Exide Keepalite Emergency Lighting Battery System automatically and instantly supplies abundant light, to a single room or an entire building, *in case the normal electric current supply fails.* It is fully automatic and absolutely dependable.

MAIL THIS COUPON

The Electric Storage Battery Company
19th Street & Allegheny Avenue
Philadelphia, Pa.

Send me, without obligation, Dan Graf's Data Sheets on Exide Emergency Lighting.

Name .....

Name of Firm .....

Address .....

I am an Architect.... Engineer.... Draftsman.... Student....

IF THE STEAM TABLE IS RIGHT "DIFFERENTIAL" IS RIGHT

THE DUNHAM DIFFERENTIAL VACUUM HEATING SYSTEM is — the Steam Table *in action*. It throttles and circulates sub-atmospheric steam at any of the varying temperatures shown in the Steam Table. Study columns one and three in the Table, observe the given temperature for a given pressure, for instance with 25″ of mercury the temperature of the steam is 133° F., and so on through the entire range. Differential Heating automatically changes the heat-output of the radiators to just balance the heat-loss from the building.

Properties of Saturated Steam

Vacuum Inches of Mercury	Absolute Pressure Lbs. per Sq. Inch	Boiling Point, or Steam Temp.	Volume of 1 Lb. of Steam Cu. Ft.	Heat of the Liquid Btu	Latent Heat of Evap. Btu	Total Heat of Steam Btu
25	2.417	133.22	145.0	101.10	1017.0	1118.1
24	2.908	140.31	121.9	108.18	1012.9	1121.1
23	3.399	146.45	105.4	114.31	1009.4	1123.8
22	3.890	151.87	92.9	119.73	1006.3	1126.0
21	4.382	156.75	83.1	124.61	1003.5	1128.1
20	4.873	161.19	75.2	129.05	1001.0	1130.0
19	5.364	165.24	68.7	133.10	998.6	1131.7
18	5.855	169.00	63.3	136.86	996.4	1133.3
17	6.346	172.51	58.7	140.38	994.3	1134.7
16	6.837	175.80	54.7	143.67	992.4	1136.1
15	7.329	178.91	51.3	146.79	990.6	1137.4
14	7.82	181.82	48.30	149.71	988.8	1138.5
13	8.31	184.61	45.61	152.50	987.1	1139.6
12	8.80	187.21	43.27	155.11	985.6	1140.7
11	9.29	189.75	41.12	157.66	984.0	1141.7
10	9.78	192.19	39.16	160.10	982.6	1142.7
9	10.28	194.50	37.41	162.42	981.2	1143.6
8	10.77	196.73	35.81	164.65	979.9	1144.5
7	11.26	198.87	34.35	166.81	978.5	1145.3
6	11.75	200.96	32.99	168.90	977.2	1146.2
5	12.24	202.92	31.77	170.87	976.0	1146.9
4	12.73	204.85	30.62	172.81	974.8	1147.6
3	13.22	206.70	29.56	174.67	973.7	1148.4
2	13.71	208.50	28.58	176.48	972.5	1149.1
1	14.20	210.25	27.67	178.24	971.4	1149.7
Pounds Gauge						
0	14.70	212.0	26.79	180.00	970.4	1150.4
1	15.70	215.3	25.20	183.3	968.2	1151.6
2	16.70	218.5	23.78	186.6	966.2	1152.8

Interpolated from Marks and Davis Temperature Tables

dunham differential heating

automatically circulates steam at the varying temperatures and amounts shown in this table

Everyone knows that with the ordinary systems, circulating hot steam intermittently ("off" and "on") in mild weather, the result is overheating — irritation — discomfort — wasted fuel — loss. All these wastes and irritation vanish with Differential Heating.

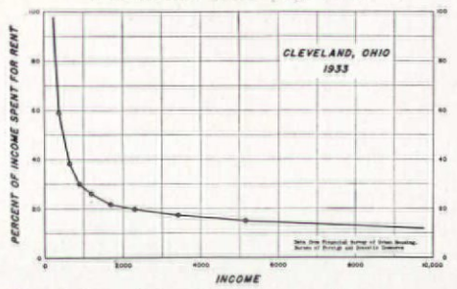
This modern heating system can easily be installed on many existing plants at a small cost. Existing piping and radiation is used. This enables old buildings to be modernized and brought up to date, giving them the ability to compete successfully with more modern buildings.

C. A. DUNHAM COMPANY

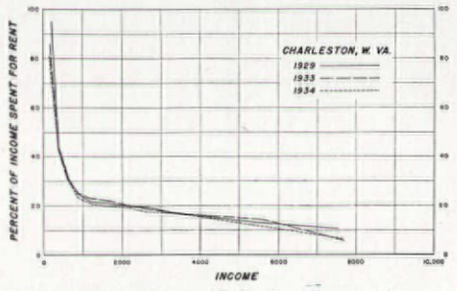
450 East Ohio Street, Chicago

Over eighty branch and local sales offices in the United States, Canada and the United Kingdom bring Dunham Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city.

(Continued from page 244)



Rents: from 15 to 30 per cent of income.



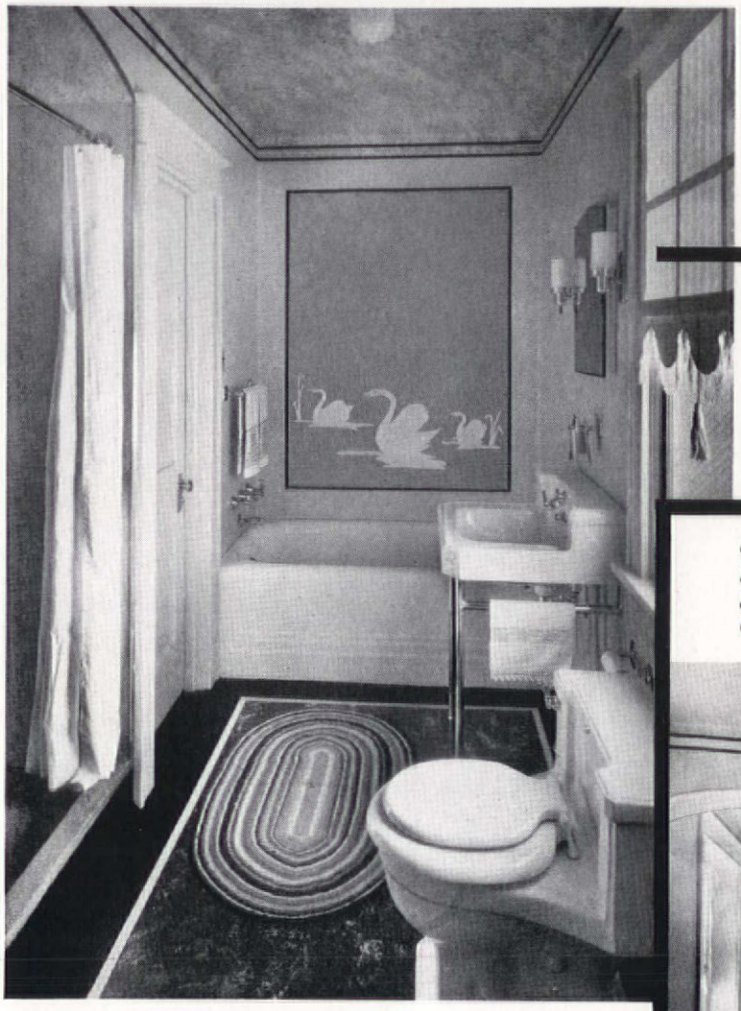
The ratio: unchanged during Depression.

spend some 25 per cent for rent; yet those earning $4,000 annually spend but 15 per cent. Conversely, those earning but $1,000 annually reverse the procedure by paying 30 per cent. The percentage of income which tenants in Cleveland, a typical city of the 51 examined, annually spend for housing is shown on the upper chart. This demonstrates graphically the fact that tenants in the low income brackets pay a larger part of their income for rent than do those in the higher income brackets.

Realizing the possibility that this high ratio of rent-to-income among the lower income groups might be a depression phenomenon, researchers plotted the graph for Charleston, W. Va., families during 1929, 1933 and 1934. Despite the radical change in the number of families in each income bracket during these years, the rent-income ratio curves remain practically unchanged (see lower chart). All available data bear this conclusion out, show that proportionate expenditure for housing will remain the same in good times and bad. And they also show that when tenant family incomes change, whether up or down, those families readjust their budgets as soon as possible to conform to the rent-income curve.

Thus, the level of rental expenditure will vary with each income group, and will be in the 20 to 25 per cent range only for the slender income brackets. If the head of a family which earns around $1,000 per year contracts to pay 25 per cent of that for a home he will be spending what he should and what his neighbors do. But how dangerous subscription to this rule-of-thumb may prove is ably highlighted by this consideration: the $5,000-a-year man who contracts to pay 25 per cent of his income for a home must lower his standard of living as compared with that of his neighbors, or fall delinquent in his payments.

New decorative effects FOR NEW HOMES



Distinctive Floors of Sealex Linoleum and Sealex Walls

An outstandingly individual treatment was selected for the bathroom of Dr. Paul M. Nase's home in Souderton, Pa. Into a plain green linoleum wall were set decorative panels of Sealex Wall-Covering in an off-white shade, with rich veinings. The tailored floor offers rich contrast—a black and white marbleized Sealex Linoleum.

Ceiling, walls and floor of the kitchen are all covered with long-lived, washable Sealex materials. A colorful Sealex Linoleum tile pattern on the floor—off-white shades of Sealex Wall-Covering on the other areas.



TRUST a doctor to appreciate the perfectly smooth, sanitary surface of Sealex Linoleum and Sealex Wall-Covering. It's the modern idea in floor and wall decoration, offering an almost unlimited choice of colors combined with years of labor-saving service.

Every day more new homes are featuring Sealex materials in kitchens, bathrooms, halls and game-rooms and in more formal rooms, too. For architects and builders value the *sales appeal* they add to their houses!

Especially is the new Adhesive Sealex Linoleum—the revolutionary inlaid linoleum with factory-applied adhesive on the back—leaping into "building-favor." No wonder—for it combines savings in money, in laying time and laying materials with the assurance of a *stronger* installation.

Write for full details on these modern materials that help you build sales appeal into your houses at moderate cost!

CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

SEALEX TRADEMARK REGISTERED **Linoleum Floors and Wall-Covering**

Architects are

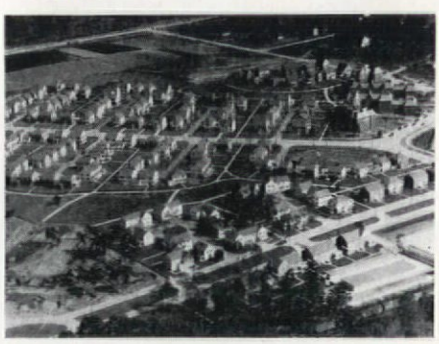
BUSINESS MEN, too

An architect has his customers just like any other business man—only he calls them clients. He must please these clients if he is to be successful—if he is to secure their recommendations for other commissions. And this satisfaction must extend down to the last detail. In the matter of finish for flooring and trim, leading architects for more than 20 years have continued to specify

TRADE MINWAX MARK

FLAT FINISH for FLOORS and TRIM

Minwax is the penetrative finish that both stains and waxes in one simple operation—eliminating the chance of trouble on the job. It brings out all the fine beauty of the grain and gives a finish that can be achieved by no other method.



Typical

Radburn, N. J. is typical of the large-scale housing developments that are using Minwax Flat Finish. Aside from beauty, a principal reason for its marked popularity is the low maintenance which Minwaxed floors require. Since the finish is *in the wood* occasional re-waxing is all that is ever necessary.

Minwax products are catalogued in Sweets—but we would be pleased to have you write us at any time for Architectural Color Card.

MINWAX CO., INC.

Dept. A. F. 9

11 W. 42nd St. New York

In Canada:

THE ATLAS ASBESTOS CO., LTD. 110 McGill St., Montreal

PREFABRICATED MAGICHOMES

race up in Louisville. How Foster Gunnison's latest was received, and a look at his merchandising plan.

LAST month a name familiar in prefabrication cropped up in an unfamiliar place. The name was Foster Gunnison, the place was Louisville, Ky. The prefabricated product this time was Gunnison MagicHomes, and the material was plywood. And Foster Gunnison's work in progress was causing a furor in Louisville.

It was over two years ago that one C. U. Gramelspacher turned up in Washington's FHA offices to ask questions. He had plywood and he wanted to build. What should he do first? He was advised to pick out an architect or an engineer who had some knowledge of plywood as a material, then go ahead. Gramelspacher sought out Engineer Thomas D. Perry, who promptly worked out a system of panels utilizing the "stressed covering" principle of airplane construction where strength and lightness are at a premium. Manufacturer Gramelspacher did not need to wait long to learn where his next step should take him, for Foster Gunnison was with him to point out direction and location.

Gunnison knew of plywood and of Manufacturer Gramelspacher because as president of Houses, Inc. (ARCH. FORUM, May, 1935, p. 508), he was at one time ready to step behind the venture with capital. Houses, Inc., which as an investigating organization in the prefabrication field had eyed all promising methods for some time, was, however, reaching the end of its road. President Gunnison slipped out quietly, taking with him smart Engineer Donald Lowman, at present secretary of the new firm, now named Gunnison MagicHomes, Inc. With Engineer Lowman to contribute technical knowledge, with Manufacturer Gramelspacher to contribute plywood, and with Organizer Gunnison to contribute experience, the firm was ready to go.

The plant was already built at New Albany, Ind., across the Ohio River from Louisville. In order to test public reaction and their own plant, the firm last month started and completed six houses.

Reaction I. Gunnison & Co. were almost run out of town on a rail. Louisville's realtors, contractors, and building trades mechanics buzzed with dismay at the prospect of the bottom knocked out of

(Continued on page 250)



Wide World

Prefabricator Gunnison



Courtesy, Louisville Courier-Journal

These Three Took Ten Days to Finish



In the restoration of this Colonial house in Albemarle County, Virginia, Architect Marshall Wells of Charlottesville, used Virginia Black Serpentine for all fireplace facings and hearths.

The scene depicting the campus of the University of Virginia makes an interesting and highly decorative background for the handsome mantel.

Virginia Black Serpentine is becoming increasingly popular for base, door trim, pilasters, and other interior trim as well as for spandrels, bulkheads and other exterior surfaces.

Like marble or granite, Virginia Black Serpentine polishes naturally, and experience shows that it will hold its polish substantially longer than any marble commercially used.

We will be glad to send you a set of samples, conveniently boxed, showing the range of stone from the Alberene Quarries, and to answer inquiries promptly.

Virginia Black
SERPENTINE

ALBERENE STONE CORPORATION OF VIRGINIA, 419 FOURTH AVENUE, NEW YORK, N. Y.

Quarries and Mills at Schuyler, Virginia

Offices at: ATLANTA, BOSTON, CHICAGO, CLEVELAND, FORT WORTH, LOS ANGELES, NEWARK, NEW ORLEANS, PHILADELPHIA, PITTSBURGH, RICHMOND, ROCHESTER, WASHINGTON, D. C., HAMILTON, ONT., CAN.



ROPER

Typical Flexwood Wall Treatment, WHITEMARSH MEMORIAL, Philadelphia, Pa., Paul Philippe Cret, Architect, Philadelphia.

"Modern wood treatment with a worthwhile saving of time and labor."

Paul Philippe Cret, architect, says: "The function and character of the Whitemarsh Memorial called for an interior of mellowness and dignity—modern but restrained in feeling. Having settled on English Brown Oak as the suitable wood, because of its character and color, we decided to use Flexwood because it would enable us to achieve a sheer wall treatment with a minimum of effort and expense.

"Well-matched and figured English Brown Oak Flexwood panels are hung vertically, with similar panels hung horizontally at six-foot height and just below the molding.

"Because Flexwood is wood in flexible form it worked out well on the large flush surfaces, and it was applied with a worthwhile saving of time and labor. In this and other instances we have found it possible to accomplish wood treatments with Flexwood, which, if practical with wood in any other form, would be very costly."

Flexwood is genuine wood veneer mounted on cloth. Flexwood, because it is wood, takes any wood finish. Please write for complete data on this modern way of wood panelling.

Flexwood

OUR CATALOGUE IS FILED IN SWEET'S

UNITED STATES PLYWOOD CO., INC., 103 PARK AVENUE, NEW YORK

Manufacturers of Flexwood, Plywood, Armorply, and kindred products

(Continued from page 248)

their market. They called meetings, the Building Congress appealed to the Board of Aldermen to restrain further construction, the building inspector was requested to deny permits. Result: A committee of aldermen joined the inspector on a trip to MagicHomes, reported, as had the FHA, that the buildings were satisfactory.

Foster Gunnison is twice shy from his first bite in Houses, Inc. No overweening claims are being made for these homes. He has bought land only for this small group of houses with options on surrounding lots. Production is feeling its way ahead carefully, the sale of houses being confined to purchasers within easy trucking distance of Louisville.

What has gone up consists of a half-dozen houses offered for sale, including the land on which they stand, at around $3,200 each. Other models are priced at $2,230 to $4,990 "erected on your own plot." "Gone up" is used advisedly. In the phenomenal time of ten working days, the houses were completed, furnished and landscaped. The achievement is impressive, and tests prefabrication's claim for speed in construction.

Greatest test of the virtue of any system of prefabrication resides in the question, Can the house be built as cheaply and as effectively in ordinary frame construction? Experts estimate that except where very cheap labor is available, a house of the same size and quality would cost more. In any case there would be an appreciable saving in carrying charges on houses which can be completed in two or three weeks instead of two or three months.

The development of six houses already up shows thought in community arrangement. They are divided into groups of three, the front doors of the three giving out on three sides of a landscaped quadrangle (see cut, p. 248). Thus the usual subdivision habit of having every entrance on the street side is forgotten and the ugly monotony of parallel rows of similar houses is broken.

Reaction 2. These houses appeal to the young and ambitious white collar group. But Gunnison is aiming his MagicHomes at the semi-skilled and unskilled laboring classes. And here to date his reception has not been any too enthusiastic. The worker's wife takes one look at the 2 in. walls of these houses and refuses to believe that a 25-mile-an-hour wind would not dump them flat on the ground. Nor is it possible, she thinks, for such walls to have sufficient insulation. Furthermore she decries the lack of privacy in the arrangement of the houses. Generally she wants her front door to open on the street, not on a quadrangle shared by her neighbors. And she is hesitant to accept innovations in construction and simplicity in design. Also, laborers in

(Continued on page 252)



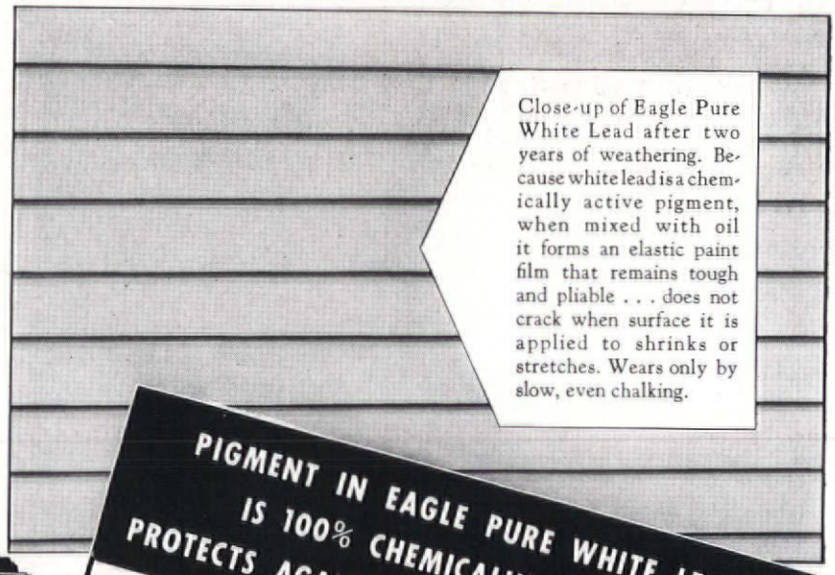
Camera shows why

EAGLE pure WHITE LEAD

gives better paint protection

Substitute pigments in this paint created a brittle film . . . cause of most premature cracking, scaling or excessive chalking.

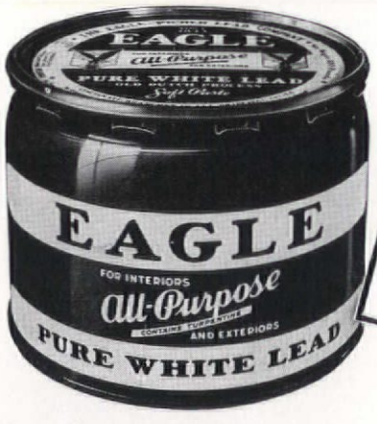




Close-up of Eagle Pure White Lead after two years of weathering. Because white lead is a chemically active pigment, when mixed with oil it forms an elastic paint film that remains tough and pliable . . . does not crack when surface it is applied to shrinks or stretches. Wears only by slow, even chalking.

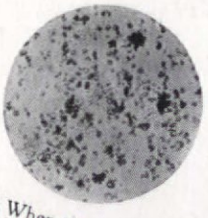


Choice of good painters since 1843.
Sold by paint dealers everywhere.



PIGMENT IN EAGLE PURE WHITE LEAD IS 100% CHEMICALLY ACTIVE— PROTECTS AGAINST CRACKING AND SCALING







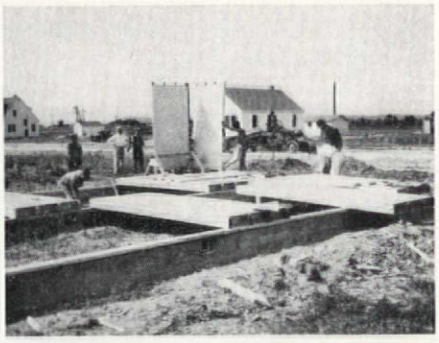
1. Eagle white lead is a chemically active pigment. See how pigment particles look when greatly magnified. (Note uneven, irregular shape of particles—one reason for white lead film wearing so long.)

2. When these white lead particles are mixed with linseed oil, a chemical reaction begins. Particles "bloom out," making an interlocking mass of pigment and linseed oil. (Inert paint pigments do not bloom out.)

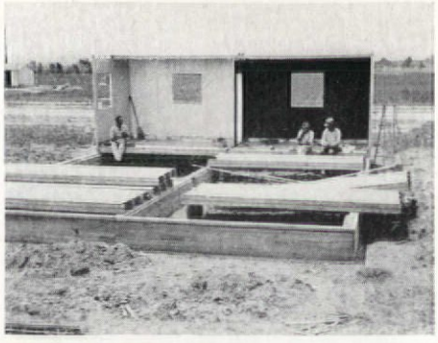
3. The union of white lead and oil forms a paint that seeps into the surface it is applied to . . . sticks on like glue. Stays tough and pliable . . . does not crack when surface stretches or shrinks.



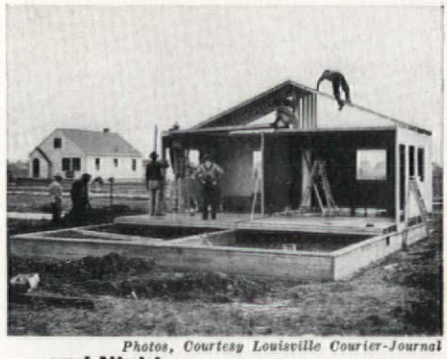
THE EAGLE-PICHER LEAD COMPANY · CINCINNATI



Morning . . .



. . . Noon . . .



Photos, Courtesy Louisville Courier-Journal

. . . and Night

(Continued from page 250)

the building trades, sensing less work, join in decrying the construction. Thus, over all, Gunnison may have his troubles in tapping this low-income group.

The architects and contractors, having once seen that inherent in the plan was something which they could turn to their advantage, are now hard at work on MagicHomes. Architects Hermann Wischmeyer, W. S. Arrasmith, and H. Fred Elswick have been called in as consultants, and the houses have been built by local contractors. Organizer Gunnison is quick to point out that local contractors will always be welcomed at erecting his MagicHomes, that he will never employ special erection crews.

Originally financed by President Gunnison himself, the houses have since received FHA approval. As yet, however, no mortgages have been taken, Gunnison footing all the bills.

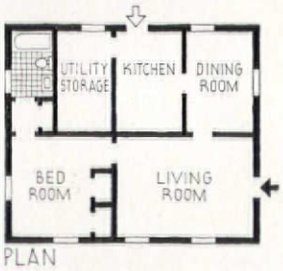
Construction. The houses rest on concrete foundations, have no cellars. The storage room, which contains a winter air conditioning system and room for laundry tubs, is between the kitchen and bathroom. Included in the selling price is an up-to-date bathroom, a kitchen sink and cabinet combined, copper pipes and flashings, and screened steel casement windows. Stoves and refrigerators, according to Louisville custom, are not supplied.

The walls, floors, ceilings, and roof are made of factory-fabricated panels of plywood glued to opposite sides of wood stiffeners. This construction takes advantage of the "stressed covering" principle used in airplane construction where lightness combined with strength is a paramount consideration. The wood stiffeners, which replace the studs and joists of ordinary construction, can therefore be much lighter than usual. The plywood is bonded together and to the stiffeners with a moisture-proof synthetic resin similar to bakelite. One plywood house utilizing these principles was developed by the Forest Products Laboratory last year (ARCH. FORUM, Dec. 1935, p. 557). Except for the method of fastening the panels together, the Gunnison houses follow much the same principles as did that model.

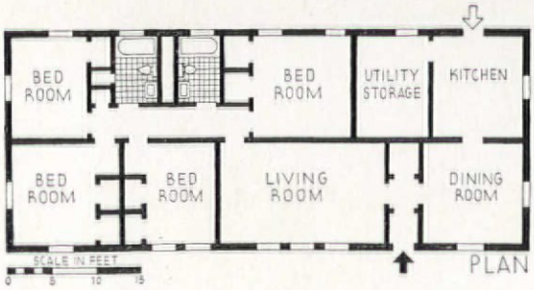
All the panels are 4 ft. wide. The interior walls are 2 in. thick, the ceilings, exterior walls, and roof being thicker. Exterior walls and roof are well insulated with a fire- and moisture-resistant blanket. In the panels containing door and window openings, frames are an integral part of the panel and require no trim. In erection the panels are bolted together, the ends of the stiffening members fitting in specially designed steel shoes. The joints are sealed and stiffened by wood splines.

The panels form 4 ft.-wide building units which can be put together to make houses of almost any size, room arrangement, and desired exterior design. Thus the floor plans reproduced below can be directly reversed or interchanged with simplicity. And thus, at Louisville, the houses have sloping roofs covered with composition shingles, while one has shingled siding, another clapboards, and a third shows an exterior trim applied directly to the plywood.

Taking full advantage of plywood and factory fabrication, the panels are delivered from the factory with the interior sides finished in attractive woods, stained and waxed. Floors are oak, ceilings are maple, living room walls are walnut, bedroom walls are mahogany and gum. The kitchens and bathrooms are painted ready to receive a final coat of enamel of any desired color.



Price: $2,320



Price: $4,990

Distribution. For prefabrication ever to be a practical fact in U. S. housing, two obstacles must be surmounted: some method of distribution must be worked out, and the public's deep-rooted distrust of prefabrication must be ended. Only with the solution of these problems can it step into mass production.

President Gunnison knows all about the difficulty of distribution. He has tried in the past to get local dealers to handle his products. And he knows of public distrust, the feeling people have of not wanting a home out of a sample book to roll up to their plot of ground in a truck. So long hours of his thought have been devoted to the solution of this problem, have resulted in the following plan, which may kill both birds:

Go to a city of the size of Louisville and organize a limited dividend corporation. Select a housing committee, made up of local architects, realtors, and contractors so as to incur no local animosity. To the committee present specific cost and plans of the MagicHomes. Then subscribe $50,000, if the committee raises $150,000. With a clear-cut program, local petty bickering and local ax-grinding will be reduced to a minimum. The corporation can then choose its architect to adapt the community plan to local conditions. For the scheme's sponsors, such a plan means an end to the large selling organization, an end to the need for large working capital. Costs of the houses will be thus reduced to a minimum. The $50,000 invested with the local corporation should mean, President Gunnison believes, immediate production of 300 houses. Such is the pattern which would ideally be repeated from city to city, increasing in savings as it increases in scope. Finally, local dealers could be called in for still greater expansion, and they would probably be glad to come in.

Last month, following his own plan's procedure, President Gunnison had:

¶Formed the housing committee, insuring friendly relations with those who surround Louisville's building dollar.

¶Learned of a prospective Louisville limited dividend corporation, met its backers, discussed with them his plan.

¶Chosen local architects to adapt his project to Louisville.

¶Begun building, whether toward a goal of 300 houses only he knew.

★

AIR CONDITIONING *based on Leadership in* FUNDAMENTALS

Delco-Frigidaire offers unmatched experience where experience is most essential

When air conditioning is under discussion—as is the case with constantly increasing frequency—your clients look to you for guidance. They expect you to point out the specialists in this relatively unfamiliar field. At the risk of seeming immodest, but in the interest of clarity, we suggest that Delco-Frigidaire is the leading specialist in air conditioning today.

We do more than assert leadership, however. We shall offer proof. The basis of summer air conditioning is cooling and dehumidifying air within rooms or buildings. The accepted method of achieving this two-fold aim is through the use of electric refrigeration.

Delco-Frigidaire represents world leadership in electric refrigeration, and thus holds unchallenged first place in that very phase of air conditioning on which the whole art is predicated. These facts, we believe, justify us in writing Q.E.D. after the premise stated in the headlines of this page.

Our representatives are always ready to discuss air conditioning plans for air conditioning systems of all sizes and for all purposes. Many architects have found the suggestions of our engineers helpful. May we talk with you before you make your decisions in regard to your next air conditioning problem?

2 ACCEPTED FACTS ABOUT AIR CONDITIONING THAT POINT TO ONE CONCLUSION

1 Summer air conditioning is basically cooling and dehumidifying.

2 The accepted method of accomplishing this is by electric refrigeration.

CONCLUSION

Buy air conditioning from Delco-Frigidaire—the organization representing most experience in electric refrigeration.

See Sweet's Catalogue File (Section 26/7) for details on our air conditioning equipment. For further details, or appointments with our representatives, write our headquarters at Dayton, Ohio, or telephone our New York office, CIrcle 7-1367.

DELCO-FRIGIDAIRE CONDITIONING CORPORATION

AUTOMATIC HEATING **DAYTON, OHIO** *AIR CONDITIONING*

PRODUCTS OF GENERAL MOTORS



Wide World

OPENINGS . . .

¶"The House of the Modern Age" (left), B. S. Moses' and Chrysler Building Architect William Van Alen's prefabricated National House, gained invaluable publicity when New York's Mayor Fiorello H. LaGuardia learned last month to his quoted disgust that cocktails were being served at the opening. It drew thousands of visitors thereafter. Publicized as prefabricated, it took over two months to build.

¶In Atlanta, Ga., the PWA opened Techwood (below, left), first of its major slum clearance projects, to house 604 families at rentals which start at $5.50 per room per month.

¶Meantime, the Resettlement Administration had completed the first unit of Greenbelt, the low cost housing project at Berwyn, Md. (below, center), which will house 1,000 families next Spring.

¶The RA had also shipped from Manhattan the first pioneer families of the garment center (below, right), to live and work in the model community at Hightstown, N. J.



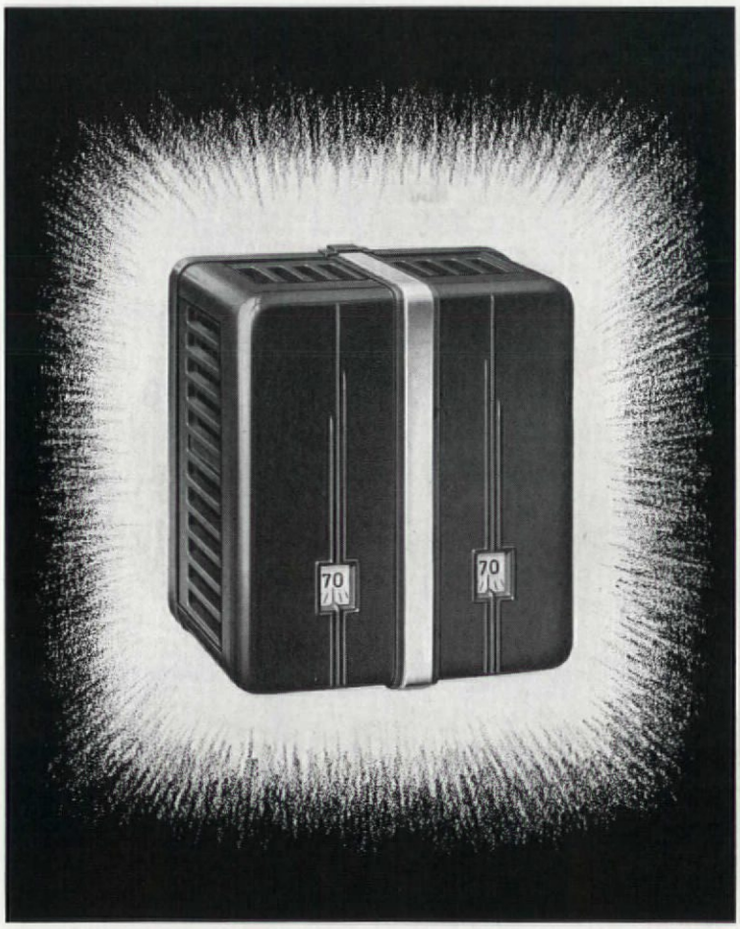
Acme



Underwood & Underwood



Wide World



The

MICROTHERM

for

BETTER TEMPERATURE CONTROL

•

This brand-new electric thermostat is the temperature-sensitive unit of the latest Barber-Colman control system. A simplified circuit provides extremely accurate positioning of proportioning valves and damper control motors, resulting in a uniformity of controlled temperature hitherto unrealized. Equilibrium conditions are determined and maintained by a unique application of the newest control principles, using a motor-driven potential dividing rheostat in the governed unit. We will be glad to send literature explaining the Microtherm and showing how it achieves such remarkable results.

•

BARBER-COLMAN COMPANY

ROCKFORD ILLINOIS

...AND CLOSINGS

¶Answering a siren, the Sunnyside, L. I. call to arms, about 40 Queens housewives hurried one afternoon last month to help Mrs. Toni Maxwell resist eviction from the City Housing Corporation's famed low rent community. Although blocked by sandbags, barbed wire, and wet cement, and harried by flour and pepper (right), City Marshal Daniel C. Hicks did his duty. J. Charles Loue, leader in the Sunnyside Home Owners Protective Association, thereupon conducted a mock funeral (below), to mourn the death of his home's deed.

¶Back in 1925, Exalted Ruler James J. Farley of 877 raised most of the money to build a $140,000 Elk Building (bottom right) at Haverstraw, N. Y. Last month, unable to meet interest on the mortgage, Haverstraw's Elks appealed to Postmaster General Farley for more help. When none came, the big brick building was sold at foreclosure for $12,000. No. 877 moved into a mid-Victorian crate (below, center).

¶In Dallas, Tex., the promoters of the Centennial, trying to forget Fort Worth's Billy Rose, found their troubles doubled when a tornado crumbled to the ground such flimsy sets as that of the "Cavalcade of Texas" (below, left).



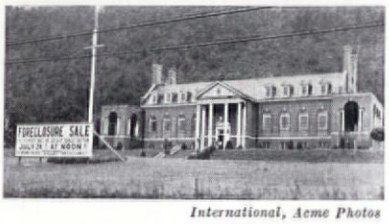


Wide World

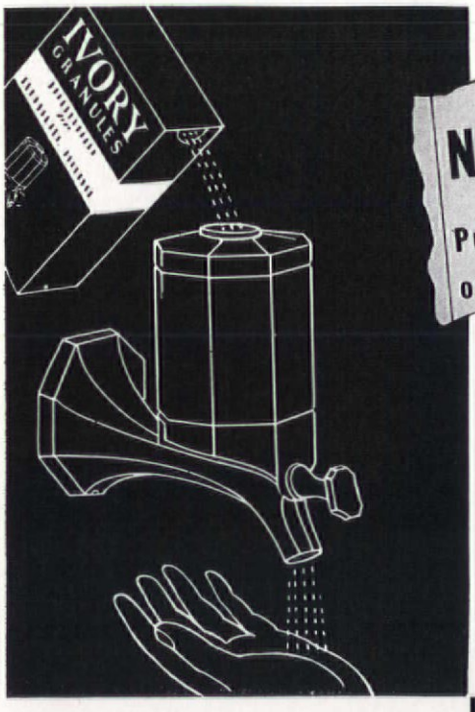


Acme





International, Acme Photos



NO LONGER A STEP-CHILD

Public washrooms win good-will as alert owners install Ivory Soap Dispensers

THE public washroom is no longer a step-child. Today, far-sighted owners and operators realize that proper wash-up facilities are a decided asset to their buildings.

The Ivory Soap Dispenser offers a distinct contribution to washroom modernization plans. Here is a modern soap dispenser which combines beauty and utility in generous proportions . . . which is economical in first cost and in up-keep . . . which gives definite satisfaction to the user.

Ivory Dispensers add the final touch to a thoughtfully designed public washroom. A folder describing their many advantages is yours for the asking.

The Ivory Dispenser delivers genuine Ivory Soap in fine, free-flowing *flakes* or *granules*. Gracefully designed. Self-contained. No complicated piping system to clog or get out of order. No parts to rust, tarnish or corrode. Always delivers. See "Sweets" for technical details.

Ivory Soap
DISPENSER
Procter & Gamble · Cincinnati, Ohio



Lincoln Bank Tower, Fort Wayne, Ind.

CENTRAL HEAT CONTROL CUTS COAL CONSUMPTION

Webster Moderator System Saves $781 in Lincoln Bank Tower During '35-'36 Season

Uses "Control-by-the-Weather"

Fort Wayne, Ind.—The Lincoln Bank Tower, equipped when built in 1930 with a modern vacuum system of steam heating, was further improved during the summer of 1935 with a Webster pneumatic-type Moderator System of Central Heating Control.

This improved system reduced coal consumption 150 tons during the 1935-36 heating season, equivalent to a cash saving of $781.50.

During 1935-36, with the Webster Moderator System, the cost of heating the Lincoln Bank Tower was $2,349.71. The old system for a comparable number of degree days would have required a fuel expenditure of $3,131.21.

The effectiveness of the Webster Control is indicated in the following summary:

	Lbs. Coal Fired	*Degree Days*	*Lbs. Coal Per D.D.*
1934-35—Before Webster Control..	1,073,520	6,046	177
1935-36—After Webster Control..	902.000	6,792	132

Investigation of comparable buildings led the management of the Lincoln Tower to the conclusion that addition of Webster "Control-by-the-Weather," with accurately sized metering orifices and convenient manual supply valves, would afford increased flexibility and at the same time effect a modest saving.

The results of the first season's operation show the objectives fully achieved. Comfort has been increased and wasteful window opening reduced to a minimum.

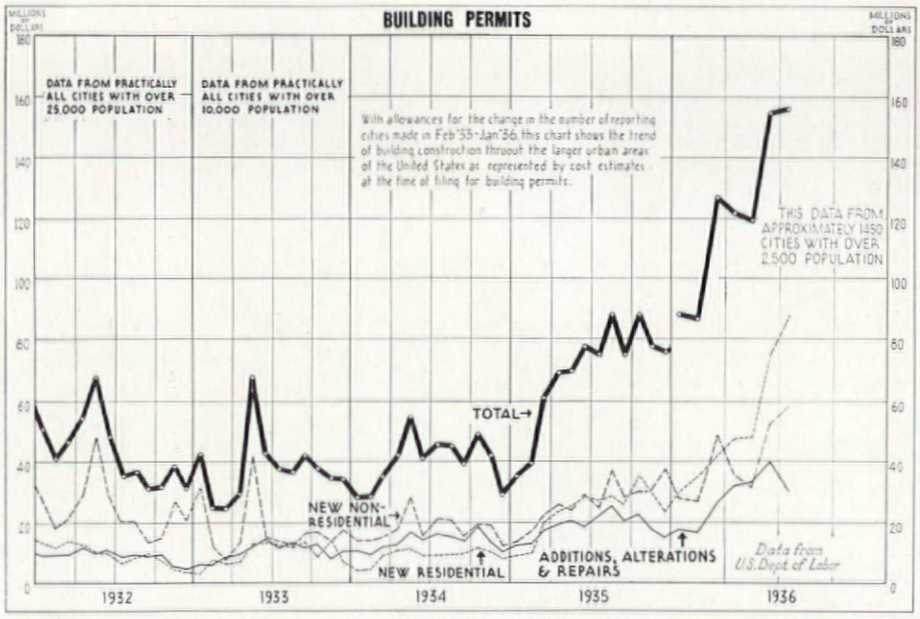
Schwegman-Witte Co., of Fort Wayne, acted as heating contractors. The architects of the building, when it was constructed, were Walker and Weeks of Cleveland and A. M. Strauss of Fort Wayne.

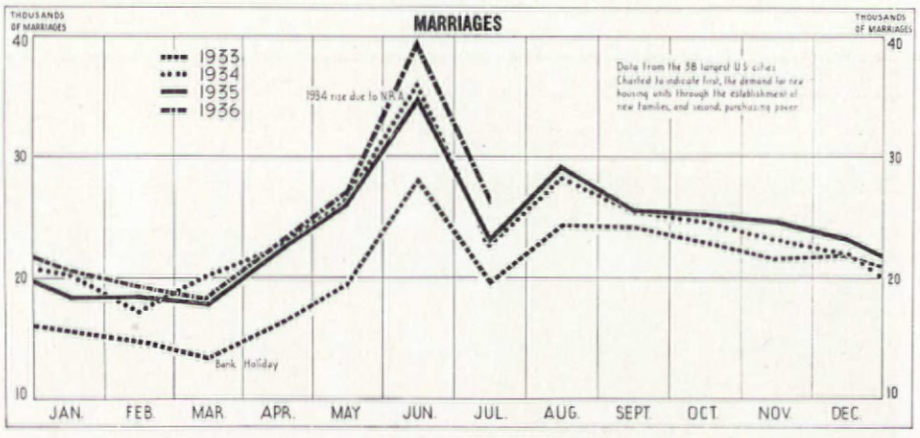
If you are interested in heating *new* buildings, or in improved heating service and lower heating cost in your present building, address

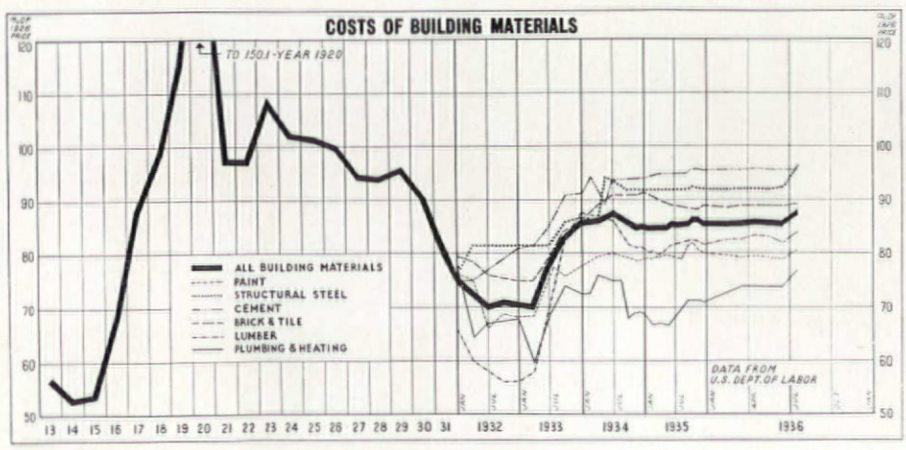
WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Branches in 60 principal U. S. Cities — Estab. 1888

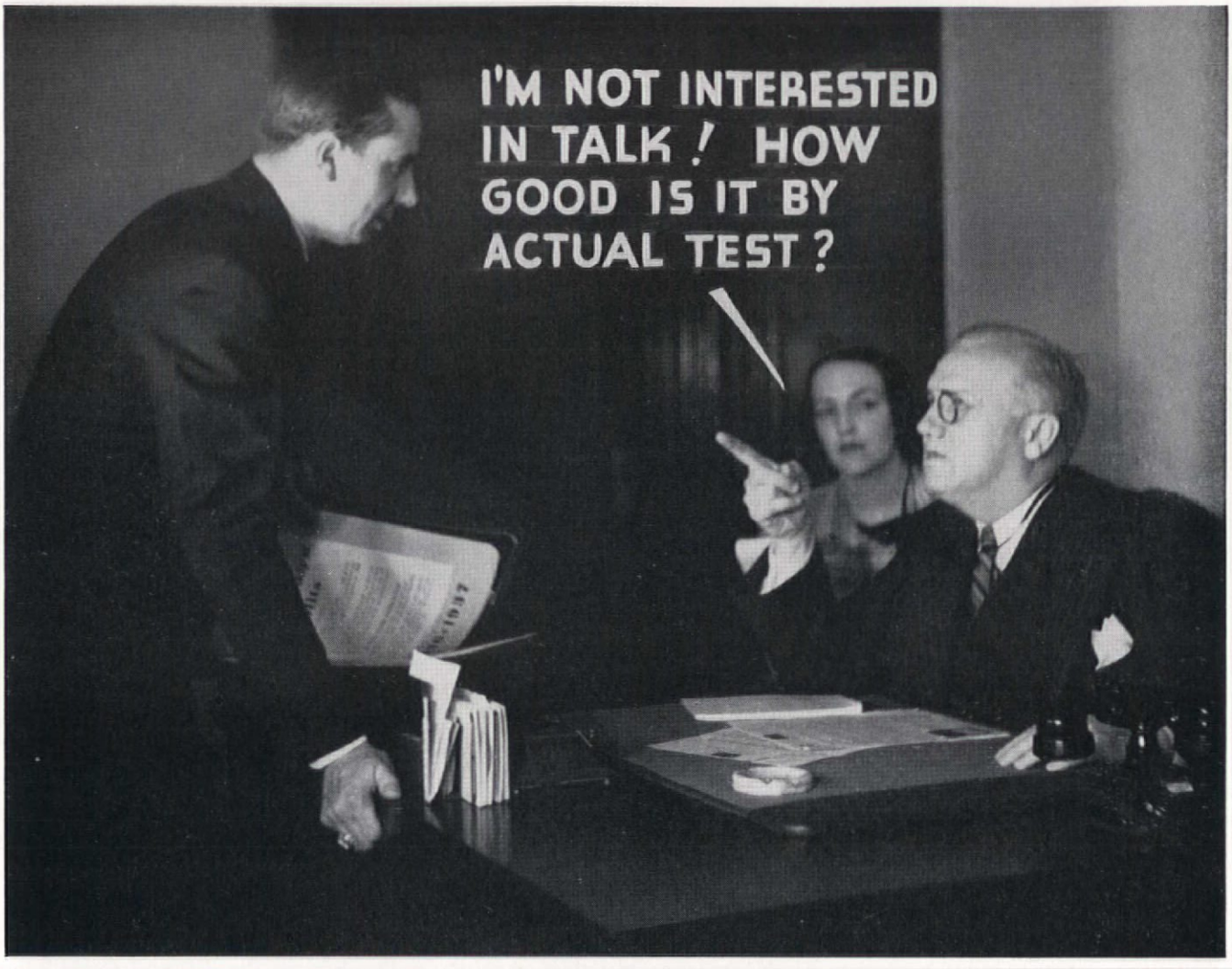
RESIDENTIAL RISE CONTINUES

as costs show their first gain in six months, and marriages drop from a traditional June high.









SONNEBORN *products have proved themselves by performance...*

SONNEBORN products do not have to sell themselves on potential ability. They have behind them a fine record of performance achieved by rigid testing on thousands of jobs.

Architects, builders and maintenance superintendents in schools and industrial plants, who have constantly used and recommended SONNEBORN products, will tell you that they have come to know and depend on their being entirely satisfactory under all types of trying conditions.

SONNEBORN maintains a complete engineering department, ever ready to discuss and help in every way to eliminate guess work from your Waterproofing, Dampproofing or Paint problems. To avail yourself of this service involves no obligation on your part.

Literature on SONNEBORN'S Tested Products will be sent on request.

Sonneborn's Tested Products

LAPIDOLITH—The guaranteed method of securing dustproof concrete floors.

LIGNOPHOL—A scientific penetrating preservative and finish for wood floors.

HYDROCIDE COLORLESS—For exterior waterproofing of masonry walls.

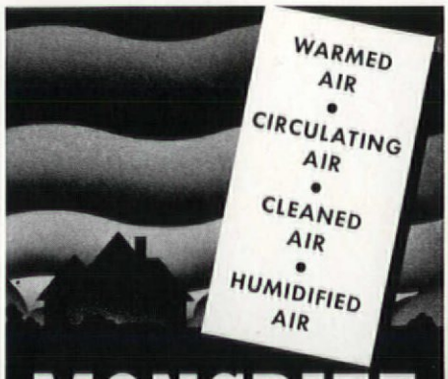
KAUKIT—Non-shrinking waterproof caulking compound.

CEMCOAT—Light reflecting enamel for interiors; also waterproof coating for exteriors and floors; is outstandingly superior for masonry surfaces.

HYDROCIDE WATERPROOFING AND DAMPPROOFING—Integral admixtures; foundation and plasterbond coatings.

ARCHITECTURAL FINISHES (PAINTS AND ENAMELS)—Special acid and alkaline resisting paints for conditions peculiar to any industry or need.

L. SONNEBORN SONS, INC. 88 Lexington Ave., New York City



MONCRIEF *Winter* AIR CONDITIONING SYSTEMS

Amply Fulfill Today's Demands

NO LONGER will the alert home owner be satisfied with a mere heating plant.

Nor should he be; for now he can have, at practically the cost of a good heating plant, a modern Moncrief Air Conditioning System. Then he can be assured of satisfactory and economical heating. Besides he enjoys:

Air in motion, equalizing temperatures, making remote rooms and every corner fully comfortable;

Clean air, filtered from three to five times an hour, with floating dust, lint and dirt particles constantly being removed;

Humidified air approximating that of a day in early summer.

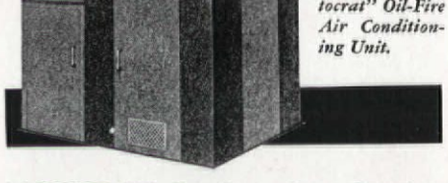
In hot weather, the circulating equipment creates a cooling effect by forced ventilation.

Moncrief Air Conditioning Systems—made in three different types for either gas, oil or coal—are modern in design, substantially built, and artistically finished, and are priced to present plus values.

Write for illustrated literature and data sheets.

THE HENRY FURNACE & FOUNDRY CO.

3485 E. 49th St. • Cleveland, Ohio



Moncrief "Aristocrat" Oil-Fire Air Conditioning Unit.

MONCRIEF Engineering Service is maintained to cooperate with architects and builders in estimating and laying out plans. No cost or obligation.

STARRETT BUILDS

again, this time on Ten Eyck, PWA's largest project.

LAST month to Starrett Brothers & Eken went the PWA contract for the construction of the superstructure of the Ten Eyck buildings in Brooklyn, largest of New York City's five boroughs. Thus to President Paul Starrett, last of the five brothers famed in skyscraper building, is to be credited another superlative, most recent of a long string. For the Ten Eyck buildings constitute the largest housing project ever to be undertaken in the U. S., mean



Pirie MacDonald

Builder Starrett

the largest job to be undertaken by Starrett Brothers & Eken since erection of Manhattan's Empire State building.

The $7,556,400 bid by Starrett Brothers & Eken meant primarily that important builders were once more taking on PWA contracts, and reflected a temporary end to the embarrassment which Secretary Ickes had been experiencing when bids failed to come in on projects in Charleston and Columbia, S. C.

The Ten Eyck low rent project, which will clear out some of the most congested slum areas of Brooklyn's Williamsburg district, is planned to house 6,500 persons on a plot covering twenty-six acres. Work last month had progressed to the point where the foundations of the project were near completion.

Those curious enough to look could examine the list of buildings in which a Starrett brother has had a hand—Manhattan's towering No. 40 Wall Street and cavernous Pennsylvania Station, Washington's Lincoln Memorial, Chicago's Blackstone Hotel—could conclude that Paul Starrett was about to build a worthy successor to a worthy line.

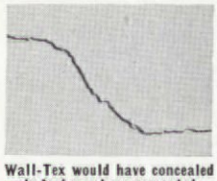
Will YOU Okay THIS BUILDER'S Policy?

"I consider it poor economy to do a good paint job without using Wall-Tex wall canvas underneath it to eliminate cracks."

No one wants rooms defaced by ugly plaster cracks

● Recently we asked a thousand families their opinions about wall coverings. Back came many reports and comments branding plaster cracks as the common enemy of interior decoration. Included was the above statement from a prominent builder.

Wall-Tex users, everywhere, said: "No more plaster cracks after decorating with Wall-Tex." That held true whether using Wall-Tex lining cloth or stiffened canvas as a foundation for painting—or Wall-Tex in distinctively beautiful patterns!



Wall-Tex would have concealed—in fact may have prevented—this ugly plaster crack on a painted wall.

Outstanding in these reports was the tribute paid to Wall-Tex washability. "We wash it twice a year—as fresh and beautiful as when applied four years ago" .... "Still beautiful after nine years and then we painted over it." People who decorate with Wall-Tex wash it freely with soap and water—wash it as often as necessary—and enjoy the fresh, original beauty of Wall-Tex for many years.



Unretouched photo of Wall-Tex being washed with soap and water — renewing its original freshness—without harm to surface or pattern.

Architects can safely recommend Wall-Tex—it, too, has a valuable reputation to protect. Over 200 beautiful patterns by foremost wall covering stylists. Write for A.I.A. File Folder No. 28-C-1, including a representative group of Wall-Tex swatches. Address Architectural Department, attention of L. Lalendorf.

COLUMBUS COATED FABRICS CORPORATION, COLUMBUS, OHIO

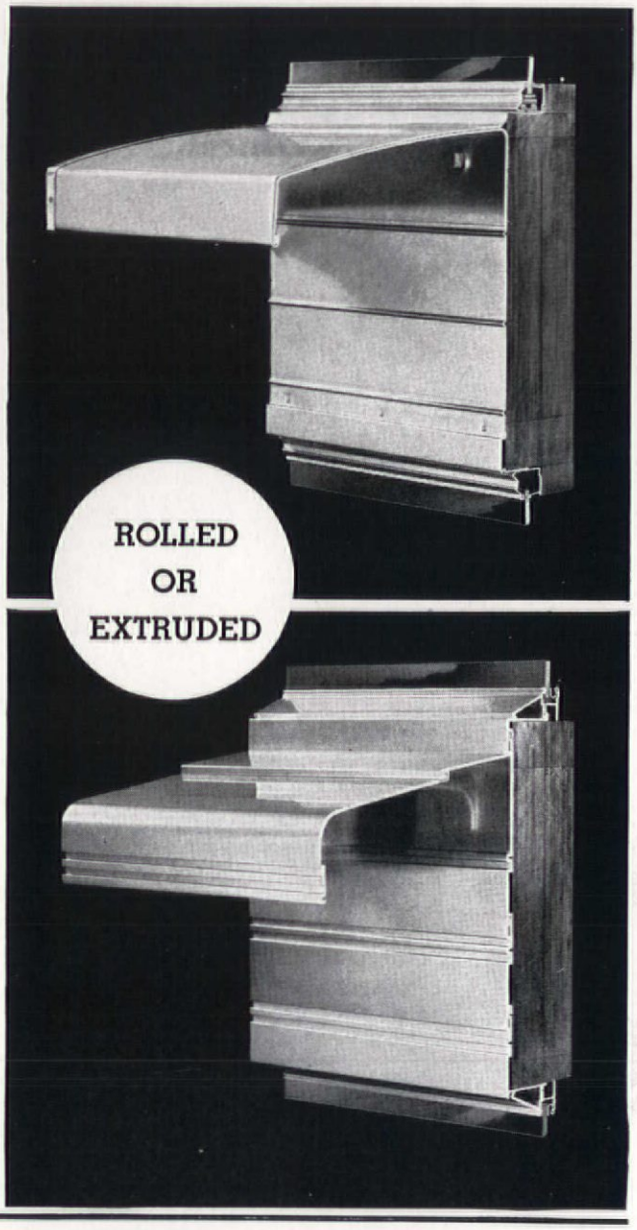
For quick reference, consult Sweet's Architectural Catalog 15/48

WALL-TEX
DECORATIVE WALL CANVAS

★

COMPLETE Kawneer RUSTLESS METAL STORE FRONT CONSTRUCTION-

★



HOOD awning bars illustrate the choice now available between cold-rolled or extruded construction in a wide and complete range of harmoniously designed Kawneer Store Front members—including sash, bars, hood, concealed and recessed awning bars, transom bars, and mouldings for various functions. Metal signs, entrance doors, bulkheads, and cast, wrought, or extruded ornaments are also available to special details, so that practical, attractive, modern metal may be utilized to the fullest extent in today's new store fronts.

GLASS PROTECTION. Kawneer cold-rolled sash and bars are fully resilient—the safest, most dependable glass holding members ever developed. Kawneer extruded sash and bars introduce an entirely new measure of resiliency in this type of construction with their patented Spring Grip; consist of only 3 parts. Sash is self-supporting.

METALS AND FINISHES. Standard Kawneer Store Front members are furnished in cold-rolled aluminum, bronze, or stainless steel; in extruded aluminum or bronze. Any practical finish may be specified, including the durable alumilited aluminum finish for which Kawneer maintains full equipment.

IDEAS. Kawneer has just published a valuable source book—The Kawneer Book of Store Fronts—with some 250 photographs of modern store fronts. A copy of this 52 page book will be mailed on request. For further data or cooperation on your next store front see the local Kawneer dealer or write THE KAWNEER COMPANY, NILES, MICH.

PATENTS PENDING

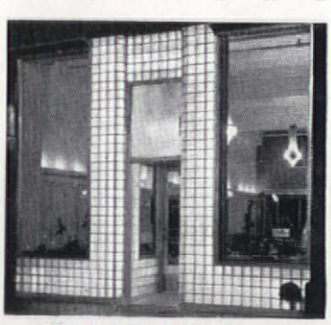
TYPICAL RECENT INSTALLATIONS



Ben Schlanger, Architect



Edward J. Shire, Architect



Konrad Keck, Architect

HELPFUL DATA SENT ON REQUEST

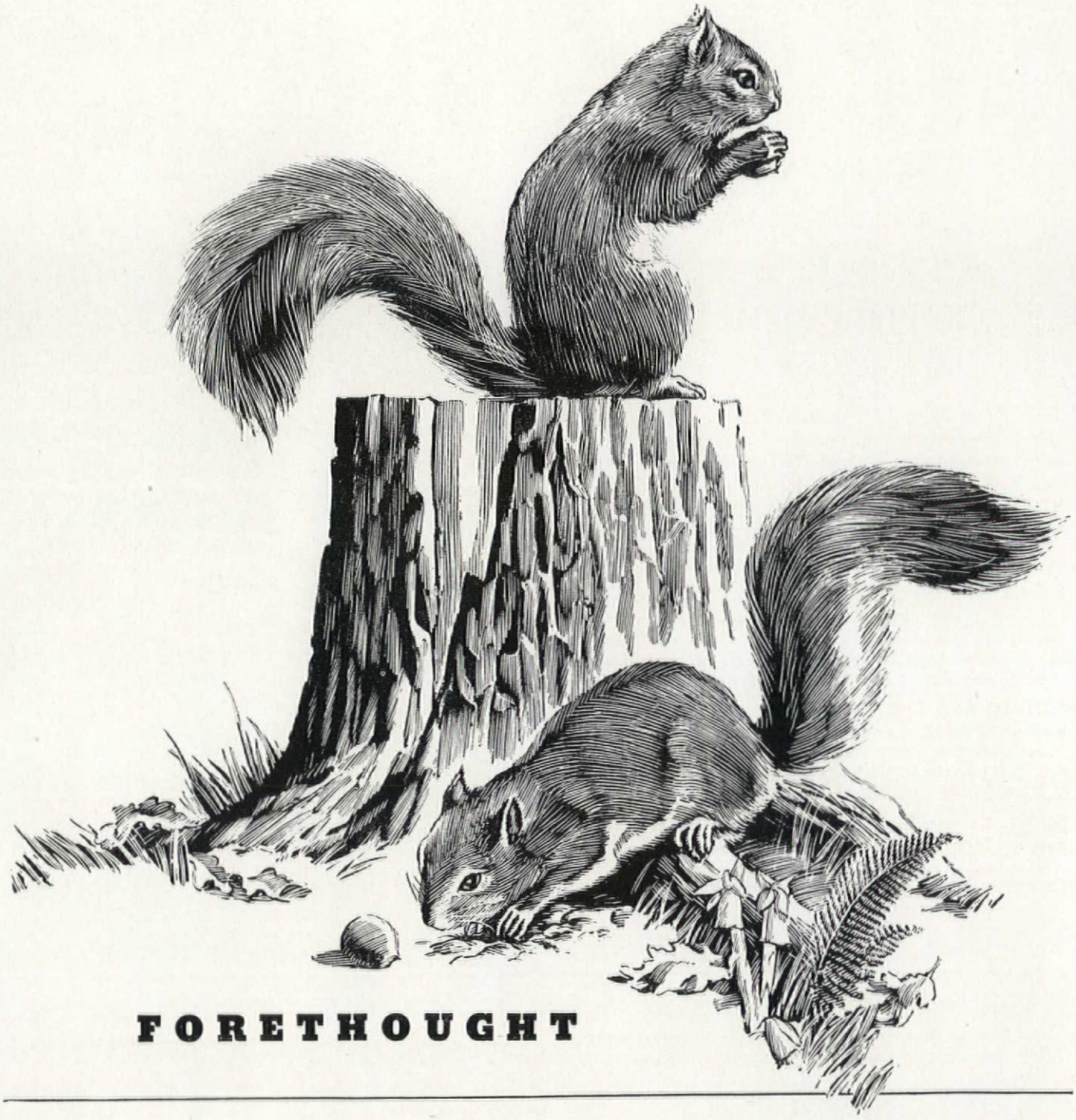
F. S. Details on Kawneer ☐ Cold-rolled or ☐ Extruded Store Fronts.
☐ The Kawneer Book of Store Fronts, with hundreds of store front photos.
☐ Illustrated booklet on Kawneer Doors.
Check data desired, fill in and mail to The Kawneer Company, Niles, Mich. No obligation.

NAME AF-9

ADDRESS

Specify

Kawneer
RUSTLESS METAL
STORE FRONTS · DOORS · WINDOWS



FORETHOUGHT

AN OTIS ELEVATOR will give good service for a time even though it does not receive the best of care. It is a fine machine and may mislead you into thinking that the building engineer or a local repair service can give it adequate attention.

But go over in your mind the buildings you know that have prospered these last few years. They are dividend payers because they give what the tenant demands. They demonstrate the value of a little forethought on major operating problems such as elevator maintenance.

Elevator service can't be just "so so" if the building is to prosper. It must be *good*. That is why we persistently recommend Otis Maintenance for an Otis Elevator. The Otis Maintaineers have been schooled and trained in the ways of an Otis Elevator for years. More than that, they are under moral obligation to see to it that an Otis Elevator gives all it has to give. Logic alone suggests that they can be relied upon to provide the best possible elevator service and prolong the useful life of an installation.

OTIS MAINTENANCE

FORUM OF EVENTS

(Continued from page 9)

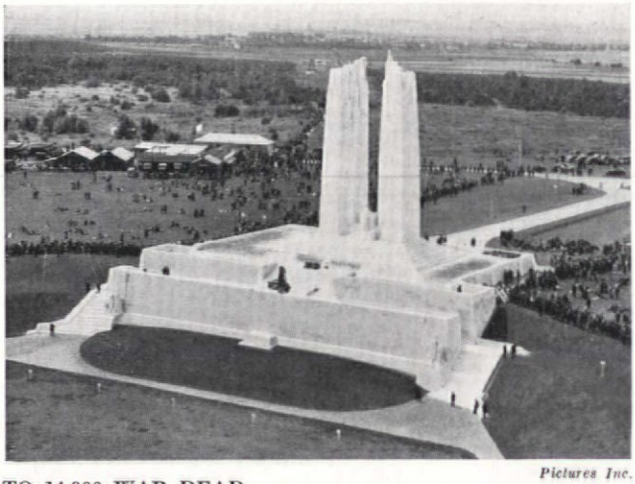
Spanish in treatment. Inside, or rather beyond, since the building is open to the mild Texas air, is a large amphitheater and a stage of such proportions that even Hollywood cannot equal it. Below the stage, which rotates, is a pool of water which is exposed to the spectator as the stage recedes to climax the most spectacular scenes. The now familiar "dine and drink as you watch the show" technique is used and apparently Texas likes it as well as New York.

The Pioneer Palace, an elongated frontier saloon, deserves mention for a neat device, a hidden stage set behind and above the bar. On the hour every hour a huge and apparently fixed mirror glides back and furnishes an unusual back drop for a naughty show.

And so 1937 completes its parade of fairs—San Diego, Great Lakes (Cleveland), Dallas and Fort Worth. No one knows yet where the indestructible Sally will turn up next—San Francisco or New York.

VIMY RIDGE

HER baptism of fire, Canada's Verdun in the World War was Vimy Ridge. Four times repulsed, French soldiers battered away weakly; Canadian corps came to the rescue, threw tons of shell onto the height, captured its principal points after terrible slaughter. Years later grateful France deeded to Canada an acre of land, provided means for a $1,000,000 memorial.



Pictures Inc.

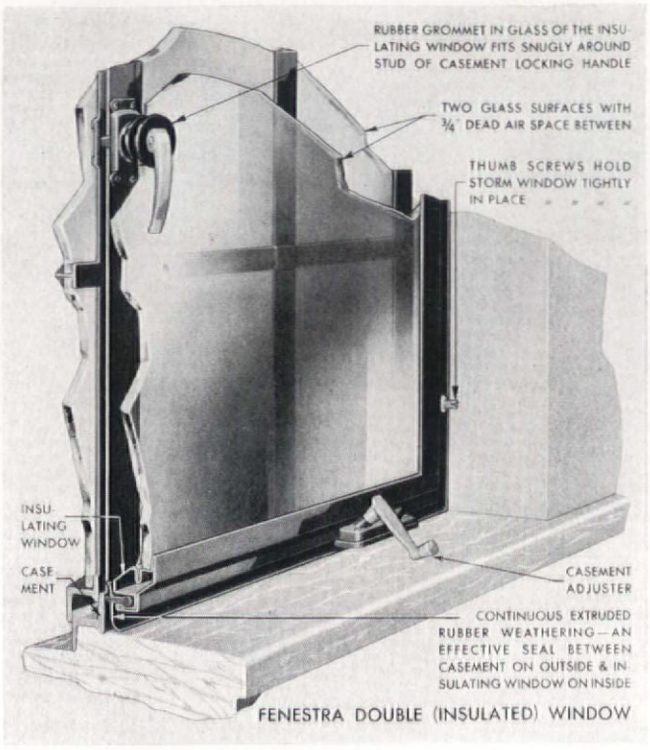
TO 14,000 WAR DEAD

Last month King Edward left native shores for the first time since attaining the throne, to dedicate the completed monument. Ten years in the making, designed and sculptured by Canadian Architect Walter Allward; twin pylons soar 138 feet above the ridge, present a powerful, striking mass. Standing out from the base, figures of Knowledge, Truth, Justice, and Peace are an effective foil to the large unadorned wall surfaces.

SWEDEN'S TOWNSEND PLAN

"THE relatives of the deceased request that no flowers be sent and that the flower funds be remembered." Such a sentence in an American newspaper would evoke considerable interest. Yet in Sweden this announcement in funeral notices frequently replaces our customary expression, "please omit flowers." Pioneer proponents of the idea, a neat plan to house the needy with funds ordinarily spent on lavish floral offer-

(Continued on page 40)



FENESTRA DOUBLE (INSULATED) WINDOW

INSULATE YOUR WINDOWS

as well as your walls

Modern ideas of winter comfort and fuel economy demand that houses have insulated windows as well as insulated walls. Double glass with at least ¾" of dead air space between the panes is the best window insulation yet devised.

That's why Fenestra Inside Insulating Windows applied to Fenestra Steel Casements are arousing such widespread interest.

They eliminate condensation and frost under all ordinary conditions (70° inside temperature, 45% relative humidity, 5° below zero outside temperature). They reduce heat loss through windows 60%. They save fuel. Put them on, quickly... from the inside... when the screens come off in the fall. Remove them any time with ease and safety for washing or storage.

Specify that all Fenestra Steel Casements you are buying now shall be *equipped for* Inside Insulating Windows. You can get the Insulating Windows themselves any time later.

DETROIT STEEL PRODUCTS COMPANY
2250 East Grand Blvd. • Detroit, Michigan

Fenestra

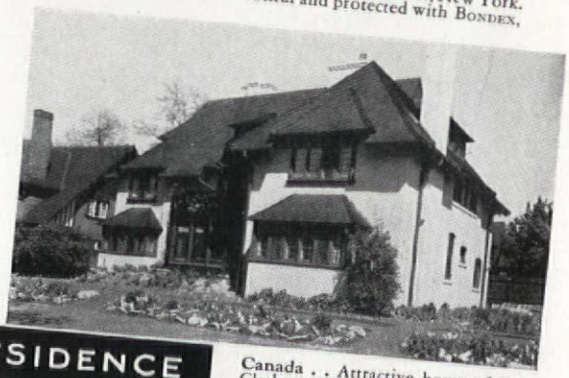
Reardon's BONDEX
The Perfect Finish

FOR



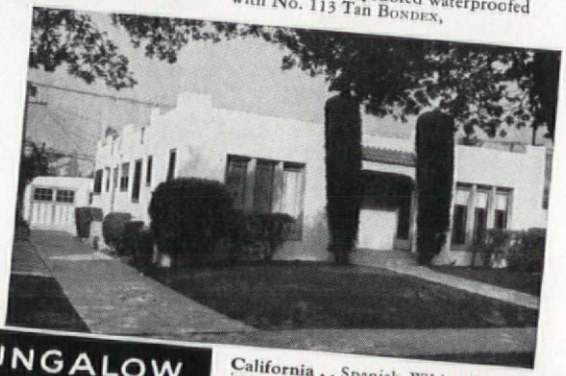
MANSION

Florida . . . Fort Myers home of Mr. Clarence Chadwick, former President of The Bankers Supply Co., New York. Beautiful and protected with BONDEX.



RESIDENCE

Canada . . Attractive home of C. T. Clarkson, Wychwood Park, Toronto, Canada. Weatherproofed waterproofed with No. 113 Tan BONDEX.



BUNGALOW

California . . Spanish White BONDEX imparts pure beauty to this charming bungalow at 921 No. Harper Street, Los Angeles.

From mansion to modest dwelling and in between, Reardon's BONDEX finds a genuine and sincere welcome because this remarkable waterproof cement paint leaves the same lasting beauty, the same positive protection against time and weather, the same satisfaction on big job or small.

Use **BONDEX** *on*

Stucco Exteriors • Leaky Basements • Swimming Pools

Free Booklet on Request to

THE REARDON COMPANY

St. Louis Chicago Los Angeles

FORUM OF EVENTS

(Continued from page 39)

ings, were the "blomsterfoden" societies. Launched sixteen years ago to the accompaniment of cries of anguish from florists, the movement has attained national proportions, operates eight large apartment houses containing 700 flats and comprises over 100 flower fund groups.

Rents in these buildings, set aside exclusively for the aged in reduced circumstances, range from $105 to $295 and are well within reach of recipients under Sweden's pension system. In appearance no different from trim surrounding buildings, they have none of the earmarks common to such U. S. institutions; provide one or two rooms, a small kitchen and frequently a large hall. Meals on the premises can be had for 25 cents.

King Gustav took a cue from the movement, built a large apartment building with money sent to him in lieu of flowers on the occasion of his fifteenth wedding anniversary. Queen Astrid's funeral flower money built another. Had such an organization existed in this country in the days when recently departed gangsters were literally buried in flowers, the housing shortage might never have developed.

TRIBORO

MOTORISTS going from Long Island north into Westchester and New England now have ample cause to rejoice. Completion of the Triborough Bridge cuts hours from a trip



McLaughlin Aerial Surveys, Wide World

TRAFFIC SOLUTION

which hitherto took place by means of a feeble ferry. Drivers swing around the "flying junction," elevated highways and elaborate system of ramps avoid tortuous routes which formerly made Sunday outings an all day endurance contest. Springing north from Queens, crossing Ward's and Randall's Islands, the nineteen mile combination of bridges and viaducts divides into two branches, one going to Harlem, the other to the Bronx.

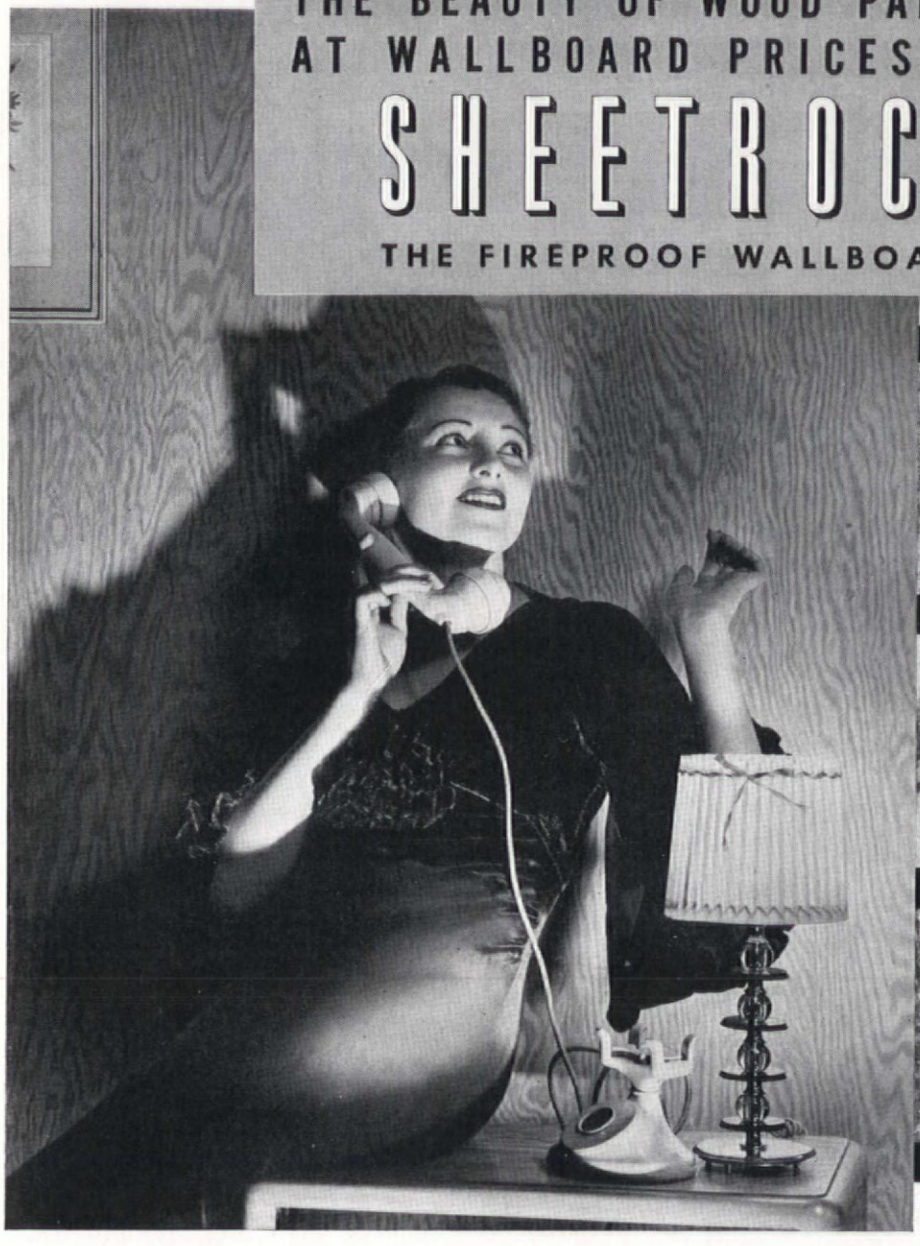
Designed by George Washington Bridge's Othmar Hermann Ammann; fostered by New York Parks' Robert Moses; financed by Federal Government $9,200,000 gift, $35,000,000 loan (New York furnished $16,100,000); the project represents a major step in a long time program for solving New York traffic congestion. Planned on generous lines, the eight lanes of the bridge handle 57,000 vehicles per twelve hour day. Toll is 25 cents; a speed of 40 m.p.h. must be maintained by passenger cars. Other East River bridges, which are toll free, noticed an immediate drop of 30 per cent in traffic when Triborough opened.

(Continued on page 42)

THE BEAUTY OF WOOD PANELING AT WALLBOARD PRICES WITH

SHEETROCK

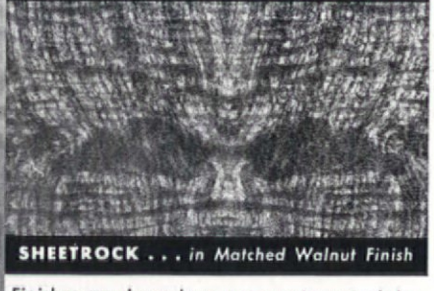
THE FIREPROOF WALLBOARD











Finishes are shown here one-quarter actual size. Beautiful natural colors range from light to dark.

Sheetrock Helps Protect From Fire

Predecorated surface saves on cost of interior

■ For beautiful fireproof interiors, specify Wood Grained Sheetrock. It is ideal for homes, offices, shops — wherever beauty plus fire protection is desired. Unique . . . inexpensive . . . it gives richness and distinction not possible with ordinary finishes.

Sheetrock is as suitable for ceiling-high panels as for wainscoting. As ideal for easy remodeling as for new construction because it is readily cut to size and nailed in place. Made in standard wall board sizes — 48 inches wide, 6 to 10 feet long — it can be tastefully paneled with stock moldings or left plain, exactly like lumber.

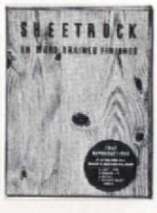
USG

ADDED FIRE PROTECTION

Sheetrock gives unusual fire protection. Made from gypsum—a mineral—it will not burn and will not support combustion. Used as a wallboard in typical wallboard construction it helps to protect the wood framework from fire. That is why we say — When you Build with Wood—PROTECT WITH GYPSUM.

AVAILABLE IN FOUR FINISHES

Wood Grained Sheetrock comes in four finishes—Knotty Pine, Douglas Fir, Walnut and Matched Walnut — all faithful reproductions of choice selected woods. For full details, send for our FREE book.



UNITED STATES GYPSUM COMPANY AF-9
300 West Adams Street, Chicago, Illinois
Please send me your FREE book, "Sheetrock in Wood Grained Finishes."

Name .....

Address .....

City ..... State .....

PRODUCT OF UNITED STATES GYPSUM COMPANY



NORTON
DOOR CLOSER

"Check up" on the door control devices of your building. Efficient operation of door closers is fuel saving and a protection to the doors and hardware, as well as assures quiet comfort. Norton Door Closers are built leakproof and therefore can be lubricated with mineral oil, the correct lubricant. Norton Door Closers are positive. They control the door all the way. Norton Door Closer Company maintains a complete service department. Engineers and designers, door closer specialists, will help solve your problems and make recommendations. Their assistance is yours for the asking.

Write for the Norton Catalog

NORTON DOOR CLOSER COMPANY

Division of the Yale & Towne Mfg. Company

2912 N. Western Ave. **Chicago, Ill.**

DOOR CLOSERS FOR ALL TYPES OF DOORS

FORUM OF EVENTS

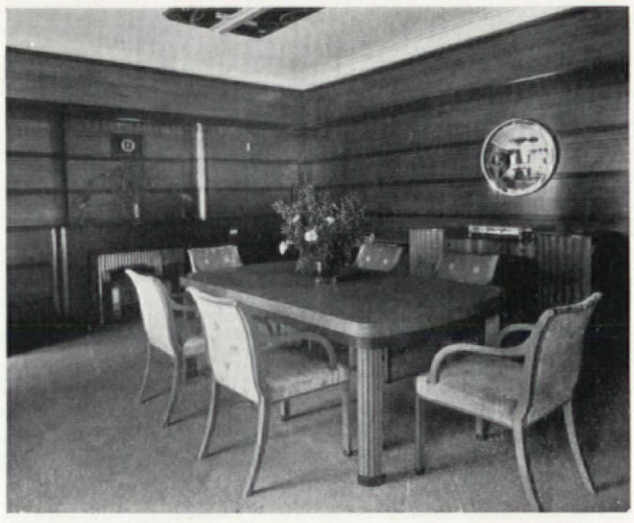
(Continued from page 40)

JUBILEE HOUSE

SEVERAL years ago American citizens gave their President a swimming pool. Not so mean in choice, the purveyors to the Crown, the Royal Warrant Holders (British industrial bigwigs) recently presented a complete house to



GARDEN ELEVATION



DINING ROOM

the King. Intended as a Jubilee gift, King George died before completion of the project. Last month title to the property passed to Edward.

Designed by 36-year-old C. Bersford Marshall, an architect with a reputation for doing swank Mayfair apartments, the house is credited with being a combination of "most of the chief excellences of Classic, Georgian, and Modern styles." Actually quite large, although termed a small house; design is a rather curious combination of elements, furnishings are mostly modern. Architect Marshall obtained the commission, fifth residence he has done, through a competition presided over by Sir Gilbert Scott, President of the Royal Institute of British Architects.

Since King Edward is in possession of scores of palaces and castles plus residences galore, it is assumed that he will probably give the house to some "person who has performed a conspicuous service to the Empire."

WALLPAPER REVIVAL

LAST month at the Waldorf-Astoria, amid the ornate surroundings of several combined ballrooms, the Wallpaper Institute fired the first broadside in an aggressive drive to expand the market for wallpaper. Interested visitors at

(Continued on page 44)



Kelvinator Surveys Enable You to advise on the value as well as on the cost!

When the decision to modernize a business establishment depends on the trade-building value of the improvements, when a prospective client wants to know whether the investment will pay dividends, Kelvinator surveys on the profit value of air conditioning become invaluable.

These factual forecasts of increased patronage, greater revenue per patron and improved employee efficiency with air conditioning, are based on recorded experience in establishments that have been air conditioned in the past. They are dependable enough to satisfy a banker. They will enable you to advise your client soundly, and convincingly.

The Kelvinator air conditioning representative near you will gladly make a complete economic and engineering survey on any of your prospective remodeling or new construction projects. And when the job is sold, he will co-operate to the fullest extent in planning and installing the equipment for best results in efficient, economical, and trouble-free air conditioning performance.

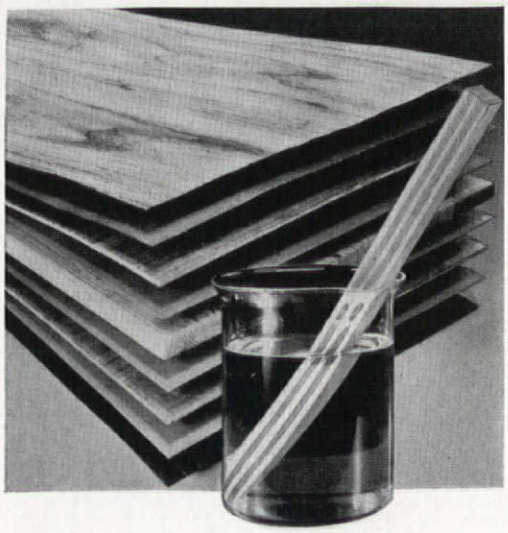
This service is freely available to you without charge or obligation, an exclusive Kelvinator contribution to sound progress in the fast-growing field of air conditioning. Architects tell us that Kelvinator Profit-Value surveys have been the deciding factor that persuaded many clients to undertake extensive remodeling jobs.

Kelvinator Corporation, 14250 Plymouth Road, Detroit, Michigan. Factories also in London, Ontario, and London, England.

Kelvinator

AIR CONDITIONING FOR PROFIT

TEGO
DRY RESINOUS BONDED



Exposure-Proof Plywood

Plywood that is really proof to water, weather, and mold has become an established commercial product in the past two years.

***Tego*-bonding—gluing with dry resin film adhesive—has made the availability of such material a fact.**

***Tego*-bonded plywood offers not merely *improved* resistance to moisture and exposure breakdown. It offers *permanent* assurance against delamination due to glue deterioration, whether from water, climate changes, or mold growth.**

• • •

Tego-bonded plywood is produced by the use of *Tego Glue Film*, the dry resinous sheet adhesive. It is available in a wide range of stocks from a number of leading fabricators.

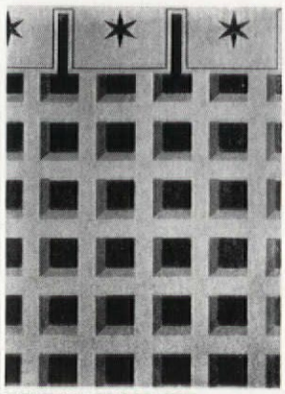
RESINOUS PRODUCTS
AND CHEMICAL COMPANY, INC.
222 West Washington Square
PHILADELPHIA

(Continued from page 42)

this first exposition of its kind, wandering through some 10,000 designs were able to note three prevailing characteristics; wide ranges of color hues, lighter and more delicately tinted backgrounds, and large color masses in broad pat-



UNITED WALLPAPER *J. A. Davis*
DECORATION



IMPERIAL WALLPAPER
PERFORATION

terns. Further investigation revealed that two new developments in wallpaper making have given designers almost unlimited opportunity for expression. They are an improved washable paper and non-fading colors (not to be confused with the old glazed papers—to the eye the new product is no different from regular papers). Quick to take advantage of these assets, the artists have blossomed forth with patterns of Oriental inspiration, clear bright flower tints, Regency patterns with formal motifs, patterns with depth and perspective—to mention a few.

Supported by statistics which show that the use of wallpaper is increasing and an inclination on the part of the public to be swayed by personal taste rather than cost, members of the Institute are primed to paper more rooms.

ART TEMPEST

I DON'T think that it should be put up in the park to scare the kids." Thus spoke Mayor W. Burdell Bannister presenting one side of a controversy which has raged in Port Chester, New York, for weeks. One of several art rows under way in various parts of the country, trouble centers around a Spanish-American War Memorial created by Karl Pavany-Illava, on a $2,000 PWA grant.

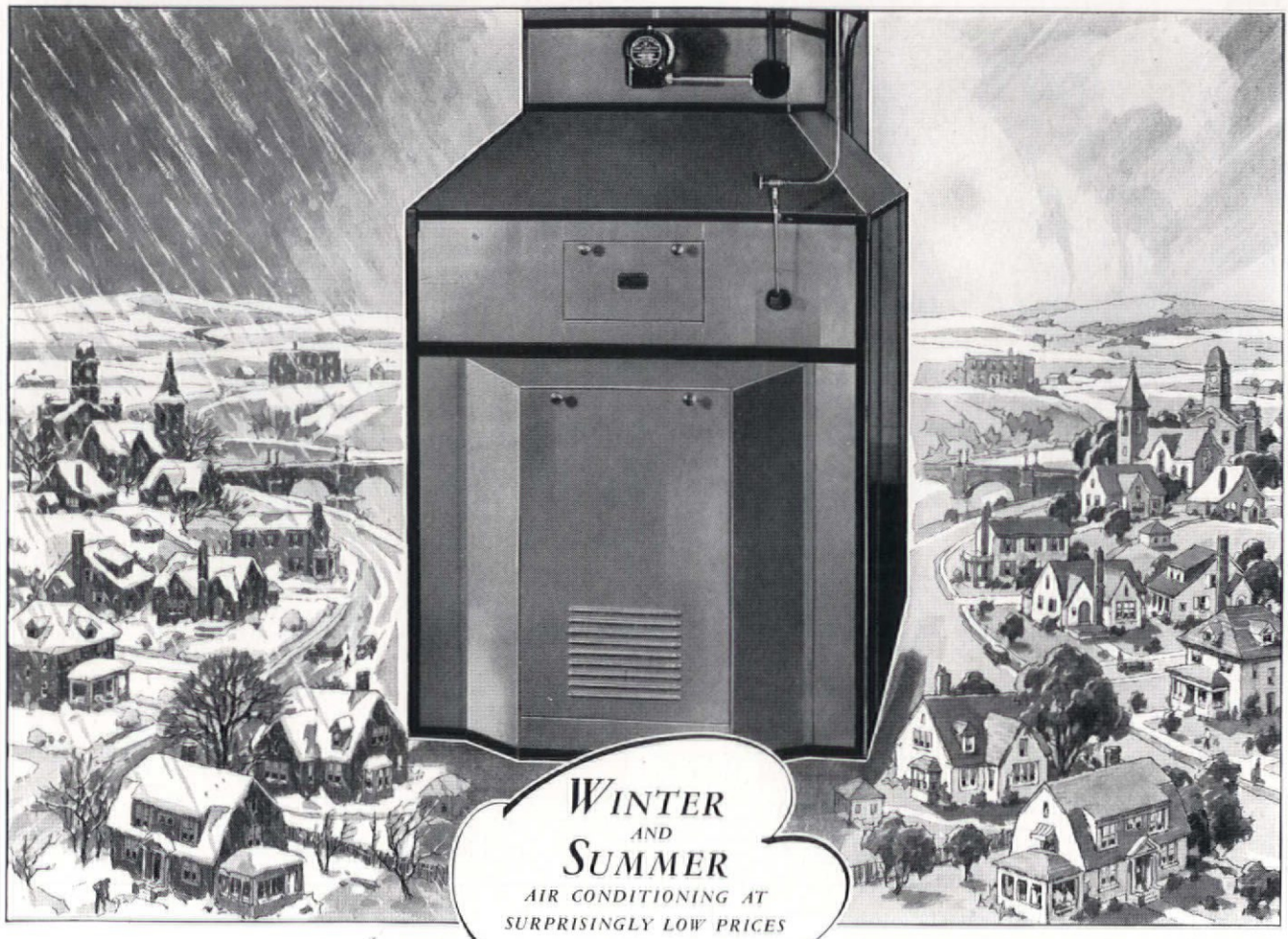


Pictures, Inc.

Put on exhibition after it had been denounced as "ugly" and "distasteful," crowds filed by the twelve-foot model, expressed emphatic opinions pro and con. Indignant Illava charged that politicians had caused the fuss. Local PWA authorities hastily called in a committee of art experts; veterans supported the design; the Chamber of Commerce took a poll which showed nineteen against the statue, five for it and two neutral.

Net result of the tempest was a recommendation for a "more conventional" figure and revived interest in art among townspeople.

(Continued on page 46)



A Pioneer in Home Air Conditioning

THE WORLD'S LARGEST INSTALLERS OF HOME HEATING *and* AIR-CONDITIONING SYSTEMS

● For more than thirty years American Home Owners have relied on the Holland Furnace Company for their home heating needs. Universal satisfaction of over 3,500,000 customers makes it only natural that architects and home owners should now look to that same company for equally satisfying results in the closely related field of home air conditioning. They will not be disappointed. The new Holland Air Conditioner is a direct outgrowth of our long experience in developing scientific warm air heating for homes.

Every Holland System is designed from the architect's plans by Holland's own factory-trained engineer and is installed by Holland's own specially trained mechanics. Finally, the Holland Furnace Company directly guarantees complete satisfaction to your clients—no middlemen—no division of responsibility. Holland engineers are located at our 400 branches throughout the country. They will gladly assist you in planning any home heating or air conditioning installations for jobs on your boards. For immediate action look up Holland Furnace Company in your phone book or mail coupon for literature.

FREE! *Data Sheets* Mail the coupon for a complete set of data sheets on Holland's new Type-B Air Conditioner. Highly condensed facts arranged for easy reference by DON GRAF, B. S., M. Arch. The set of six sheets conforms to the popular "Pencil Points" series.

HOLLAND FURNACE COMPANY

Holland, Michigan

HOLLAND HEATING SYSTEMS . . . HOLLAND AIR CONDITIONING . . . HOLLAND AUTOMATIC OIL BURNERS . . . HOLLAND AUTOMATIC COAL BURNERS . . . HOLLAND AUTOMATIC CONTROL EQUIPMENT . . . HOLLAND AIR CIRCULATING EQUIPMENT

HOLLAND FURNACE CO., Dept. AF-9, Holland, Mich.
Mail the Air Conditioning Data Sheets and information on the Holland products checked below.

- ☐ Holland Heating System
- ☐ Holland Automatic Coal Burners
- ☐ Holland Oil Burners ☐ Have Engineer Call

Name .....

Address .....

City ..... *State* .....

It takes years of use
to test oil burners

Specify

OIL-O-MATIC

200,000 successful installations
18 years of leadership

7 "Musts" for Oil Burners
(Only Oil-O-Matic Has Them All!)

1. Does it atomize at *low pressure*, insuring quiet and complete combustion and long life?
2. Has it *projected flame* burning in mid-air away from the burner, with all mechanism outside and combustion chamber away from the heat?
3. Has it *diffusor* to insure, with any oil, a perfect blending of oil and air, producing a steady, unwavering flame?
4. Has it positively operated automatic safety shut-off valve?
5. Will it burn the economical, heavier, low-priced fuel oils?
6. Has it metering pump feeding unvarying quantity of oil regardless of viscosity or temperature?
7. Is the manufacturer *financially responsible* specializing exclusively in temperature control devices?

HUNDREDS of oil burners have come and gone. They *looked* well. But *actual use* proved them lacking.

Williams Oil-O-Matic oil burner has been tested by 18 years of use in homes from coast to coast. More than 200,000 have been installed.

We invite you to compare Oil-O-Matic with all others on the 7 important points listed above. Then you'll specify Oil-O-Matic—the only oil burner that atomizes at low pressure.

Oil-O-Matic is built in five different sizes. It can be quickly installed in any furnace or boiler—steam, vapor, hot water or warm air. For new construction it is provided in complete boiler-burner and furnace-burner units through Oil-O-Matic's association with leading furnace and boiler manufacturers. For useful data for your files, mail the Architect's coupon below.



Also manufacturers of Williams Ice-O-Matic Household and Commercial Refrigeration and Williams Air-O-Matic year 'round controlled weather.

WILLIAMS OIL-O-MATIC HEATING
LISTED AS STANDARD BY UNDERWRITERS' LABORATORIES

MAIL THIS COUPON TODAY

WILLIAMS OIL-O-MATIC HEATING CORPORATION
Dept. 915, Bloomington, Ill.
Please send me for my files, "The Architect's Handbook of Williams Oil-O-Matic Heating"; also the names of associated Oil-O-Matic boiler-burner and furnace-burner units.

Name .....
Address .....
City ..... *State* .....

FORUM OF EVENTS

(Continued from page 44)

BRITISH ARCHITECT

MAKING a flying trip through several U. S. cities, active Perry Thomas, president of the Royal Institute of British Architects, (who resembles Architect Voorhees) has just returned to England. Here on private business, he spent considerable time scrutinizing skyscrapers, met American archi-





George Nelson

". . . BRITISH ARCHITECTS HAVE NOT BEEN ASLEEP."

tects, expressed optimistic opinions regarding outlook on the building front. Evincing great interest in AIA activities, he stated that in spite of conservatism in his group, it had made rapid strides in building professional status and in developing new construction techniques.

AWARD



George M. Kesslere

ELLEN D. HOPKINS

WOMEN have, in recent years, attained positions of distinction in practically every field. Latest to be honored is Mrs. Ellen D. Hopkins, founder of the New York School of Applied Design for Women. The first time awarded to a woman, to her was given the Michael Friedsam gold medal as "an individual who has contributed the greatest degree toward the development of art in industry."

Presented every year since 1924 by the Architectural League of New York, some of the past winners have been, ceramist Leon V. Solon, Metropolitan Museum's Henry W. Kent; printer Frederick Goudy; and Cranbrook School founder George Booth.

(Continued on page 48)



best in asbestos

KEASBEY & MATTISON COMPANY AMBLER, PENNA.

More than 60 years of pioneering in the development of Asbestos and Magnesia products are behind the K & M Line. Keasbey & Mattison Company's long experience in working with the profession is your assurance of building and insulation materials that are specialized for every requirement . . . of unusual architectural value . . . and recognized leaders in their field.

As leaders in the development of asbestos architectural and building materials, as well as insulation of all types, Keasbey & Mattison Company offers a complete line.

Asbestos Roofing and Siding Shingles in various sizes, styles and colors
Asbestos Pipe Insulation in sections
Asbestos Insulation in sheets and blocks
Asbestos Insulating Cements
Asbestos Packings and Gaskets
Amroc (Mineral Wool) Insulations for the home

The K & M representative who calls on you is trained to work with the profession.

better white
BETTER LIGHT

Mural-tone'd interiors
REDUCE LIGHT BILLS

WE'LL SAVE mention of how you can cut painting costs 25% until we tell you why MURAL-TONE white wall paint *cannot* yellow.

It is the perfected combination of lithopone and real pigments in a casein vehicle. Neither time, nor light, nor fumes can affect the whiteness of lithopone. This is an established fact.

MURAL-TONE comes in thick, paste form. One gallon thinned with water yields one and two-thirds gallons of paint. It takes more thinner—and covers more surface. One gallon will cover as much as a thousand sq. feet.

One coat covers and hides. Ideal for new construction or for repainting almost every type of wall surface.

SEND FOR FREE SAMPLE

Test MURAL-TONE yourself. It will be better than pages of advertising. See how it hides—how far it goes—how easy it is to use.

It is offered by a company whose reputation for quality goes back to 1894. We have always believed that results speak louder than claims. Where shall we send your sample? And what color would you like?

Please address THE MURALO COMPANY, INC. (Founded 1894), 574 Richmond Terrace, Staten Island, N. Y. *Branches* —Atlanta—Boston—Chicago —San Francisco.



BETTER WHITE
BETTER LIGHT

mural-tone

The Money-Saving Paint in the Orange Can

Dries in forty minutes
•
One coat covers—and hides
•
Adheres to unseasoned plaster and cement

Will not lime-burn
•
90% light reflective
•
1 gallon yields 1⅔ gallons of paint
•
Cuts costs 25%

A MURALO PRODUCT

FORUM OF EVENTS

(Continued from page 46)

DEATHS

WILLIAM H. EMORY, JR., 57, architect, of a heart attack at his home in Baltimore.

William H. Emory was born in Baltimore and designed many local homes and office buildings. His best known piece of work was the Municipal Building. Among the clubs and organizations to which he belonged were the Merchants and University Clubs and the American Institute of Architects.

PETER TEIGEN, 45, architect and painter, suddenly at Glenveigh Castle, County Donegal, Ireland.

Peter Teigen graduated from the University of Minnesota in 1915, having later studied architecture at Harvard University. At the time of his death he was associate professor of drawing in the School of Architecture of Princeton University. Before 1928, when he came to Princeton, he had been a member of the faculty at Smith College. Active in the field of art, exhibitions of his oil and water color paintings have been held in New York, Philadelphia, and Boston. The show of contemporary American painting last year at the Worcester Art Museum included some of his work.

HENRY BAECHLIN, 62, architect, at his home, Bloomfield, N.J.

Henry Baechlin designed many well-known buildings in New Jersey. He was responsible for the planning of the Wiss Building, one of the first skyscrapers in Newark, and the Industrial Building. Many churches and apartment buildings were also his work but he specialized in theater design.

COLONEL JOHN E. KERBY, 78, retired architect, at Veterans' Hospital 81, Kingsbridge Road, the Bronx, N. Y.

Colonel John E. Kerby was born in the Bronx and served briefly in the Board of Standards and Appeals during the administration of Mayor Hylan. After serving in the New York National Guard for almost 40 years he retired in 1908 as commander officer of the 8th Infantry, now the 258th Coast Artillery.

During the World War, Colonel Kerby was superintendent of building construction at the Hog Island shipyard, Philadelphia. Among the buildings he designed are St. John's Hall at Fordham University; St. Joseph's, St. Thomas Aquinas, St. Martin of Tours, all Roman Catholic Churches in the Bronx; the Christian Brothers School at Pocantico Hills, N. Y.; and the Church of the Guardian Angels, Peekskill, N. Y. He drew designs for Manhattan College when it was proposed to locate the institution at Clason's Point instead of at Riverdale, its present site.

JAMES KAY, 57, architect, of a cerebral hemorrhage while supervising construction at Nashville, Tenn.

James Kay, born in St. Helens, England, spent the greater part of his life in America. Practicing architecture in New York, at the time of his death he was employed in Nashville supervising construction of a new court house and city hall building.

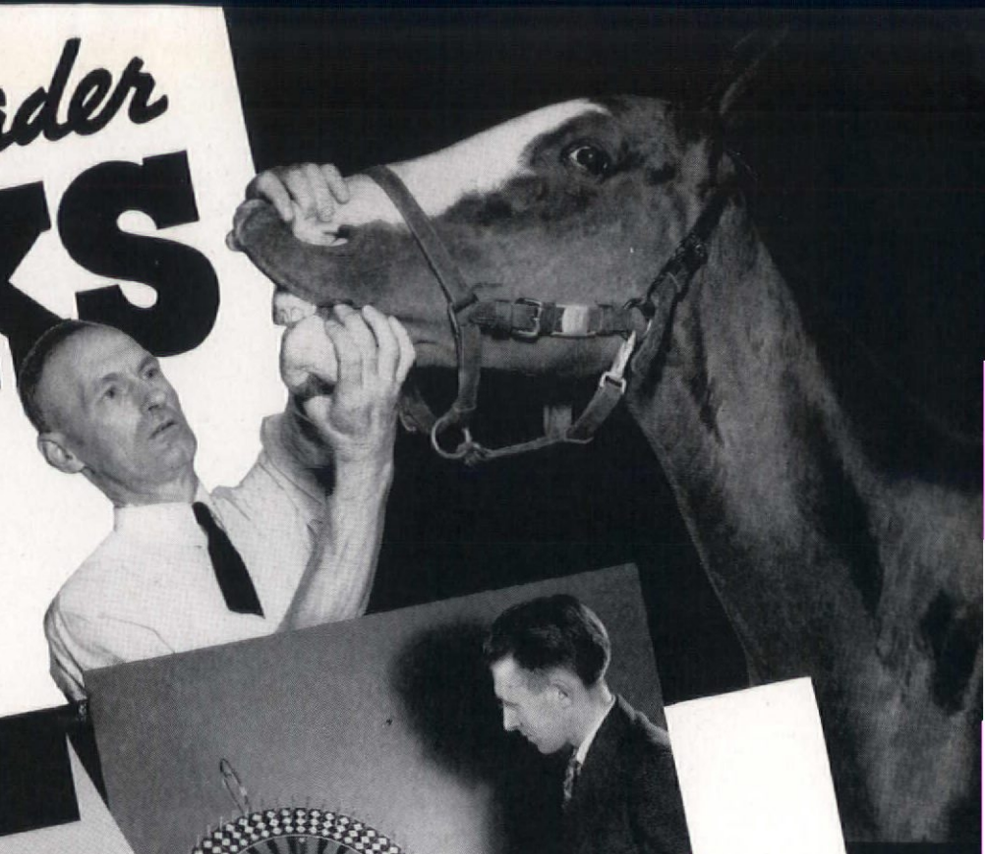
Recently he finished supervising construction of the Clark Memorial at Vincennes, Indiana.

MICHAEL JOSEPH O'CONNER, 75, retired architect, after a long illness at his home at Mount Kisco, N. Y.

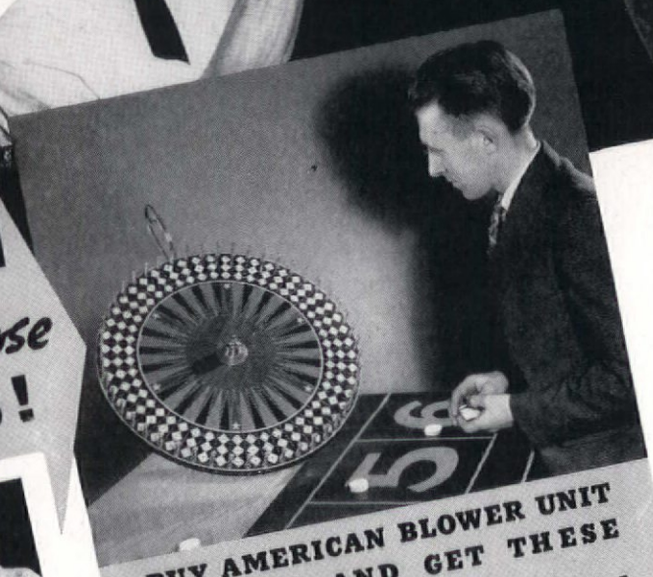
Michael Joseph O'Conner was born in San Francisco and graduated in 1881 from the School of Mines of Columbia University and in 1884 from the University's School of Architecture. For more than forty years he was a partner in the firm of Little & O'Conner, 159 East 48th St., New York.

(Continued on page 50)

The Horse Trader LOOKS AT THE HORSE



...ke No Chances When You Choose UNIT HEATERS!



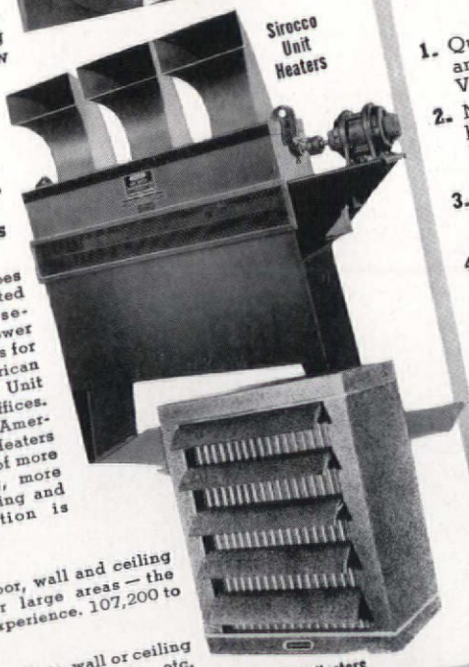
...K BEFORE YOU BUY—Select Unit ...ers as you would any important equipment. ...k before you buy . . . *compare carefully.* ...good business for you and it's good busi... ...s for us, too. Only by comparison can you ...lize the marked superiority of American ...ower Venturafin and Sirocco Unit Heaters, ...d only by insisting on American Blower ...nits will you get all the economies and advan... ...ages that can be yours. When planning heating ...equipment for your present building, new ...building or when modernizing existing heat... ...ing systems, be sure to ask your architect or ...contractor for American Blower Unit Heat... ...ers. He'll give you all the facts and he'll ...make it possible for you to *see* what you're ...buying and *know* what you're getting.



Karl C. Lambert, plant manager, says



"We looked at all types of Unit Heaters and tested several before we selected American Blower Sirocco Unit Heaters for our plant and American Blower Venturafin Unit Heaters for our offices. The difference our American Blower Unit Heaters make in the way of more efficient heating, more economical heating and quieter operation is amazing."



Sirocco Unit Heaters (center right) for floor, wall and ceiling installation — particularly adaptable for large areas — the result of fifty-one years' engineering experience. 107,200 to 1,267,500 B. T. U. per hr.

Venturafin Unit Heaters (bottom right) for floor, wall or ceiling installations in offices, stores, garages, industrials, etc. 21,000 to 471,500 B. T. U. per hr.

Venturafin Unit Heaters

BUY AMERICAN BLOWER UNIT HEATERS AND GET THESE ADVANTAGES . . . .

1. Quieter operation assured by streamline inlets and spring suspension motor mountings. All Venturafin units are rated in decibels for sound.
2. New standards of efficiency, 10 to 64% more heat, 4 to 45% more air, with no increase in horsepower. Tested under A. S. H. & V. E. standard test code.
3. Strong, rugged heating elements with cast bronze headers insure years of dependable service.
4. Trouble-free operation with brushless type, totally enclosed, quiet operating motors.
5. New beauty of design—styled by leading industrial designers.
6. The most complete line of Unit Heaters in the world to select from (two types—Venturafin and Sirocco). All units scientifically designed, engineered and guaranteed by American Blower, a division of American Radiator and Standard Sanitary Corporation—the world's best known manufacturer of heating equipment.
7. Over 100,000 American Blower Units in use, heating more than 300 million square feet of floor space.

MAKE THIS TEST—Let us send you a Venturafin Unit Heater for a 10-day comparison test. There's no obligation. We'll pay the freight both ways—you be the judge.

AMERICAN BLOWER CORPORATION

DETROIT, MICHIGAN

6000 RUSSELL STREET

MAKE A COMPARISON TEST

MAIL THE COUPON

☐ Please send Data on Unit Heaters
☐ Please send Unit Heater for comparison to

NAME _____

ADDRESS _____ STATE _____

CITY _____

AEROFIN

Light-weight Fan-system Heat Exchange Surface

MORE THAN A PRODUCT

The Result of an Unusual Co-operative Service

AEROFIN CORPORATION is founded on an unusual business principle. It sells only through nationally advertised fan manufacturers and therefore has no individual salesmen. It cooperates exclusively with manufacturers of national reputation in the development of scientifically engineered fan-system heating, cooling and ventilating plants.

Aerofin surface is something more than a product. It is the result of the co-ordinated effort of national fan manufacturers and heating and refrigerating engineers to give you the results you have a right to expect from your forced air distribution system.

AEROFIN DISTRIBUTORS

B. F. Sturtevant Co.
Buffalo Forge Co.
Ilg Electric Ventilating Co.
American Blower Corp.
Clarage Fan Co.
The Bishop & Babcock Mfg. Co.
Garden City Fan Co.
Western Blower Co.
New York Blower Co.

Canada

Canadian Blower & Forge Co.
B. F. Sturtevant Co. of Can., Ltd.
Canadian Sirocco Co.
Sheldon's Limited

All of the above have branches in your vicinity.

Buy Aerofin through the distributors listed above. You can be sure that it will live up to specifications, that it incorporates every improvement that spells high efficiency, reliability, long life and full satisfaction to your client.

Whatever your problem, get the benefit of Aerofin's skill and special engineering knowledge in solving it. Let Aerofin's home office or any of its branches study your requirements. The prompt, personal, technical cooperation of its engineers is at your service.

AEROFIN is sold only by Manufacturers of Nationally Advertised Fan System Apparatus.

AEROFIN CORPORATION
850 Frelinghuysen Avenue
Newark, N.J.
Chicago Detroit New York Philadelphia

FORUM OF EVENTS

(Continued from page 48)

The firm was responsible for the design of the College of Pharmacy Building of Columbia University, the Scranton (Pa.) High School, the residence of H. H. Flagler at 32 Park Ave. and the country homes of Mr. and Mrs. Harry Gilbert and William Brokaw in Great Neck, L. I.

PERCY I. BALCH, 60, Federal architectural department executive, at his farm near Kittery, Me.

Percy I. Balch was a native of Cambridge and a direct descendant of John Balch, one of the four "Old Planters" who settled in Salem in 1626, and also a descendant of Governor John Winthrop.

He began in the supervising architect's office in 1906. Subsequently he had charge of drawings for large government projects until 1931, when he was made assistant superintendent of the Architectural Division of the Treasury Department. He served in the latter capacity until 1934, when he was appointed administrative assistant to the supervising architect. This office is now a part of the procurement division of the Treasury.

PERSONALS

JOHN S. HOPKINS and Prentiss Huddleston announce the formation of a partnership for the general practice of architecture under the firm name of Hopkins & Huddleston with offices at 712 Graham Building, Jacksonville, Fla.

Edward Stotz, F.A.I.A., architect, announces that his practice, begun in Pittsburgh, November, 1889, has been transferred to his sons and associates, who will continue under the firm name of Charles M. and Edward Stotz, Jr., Architect and Engineer, Bessemer Building, Pittsburgh, Pa. The services of Edward Stotz will be available as consultant.

The offices of Pereira & Pereira, architects and engineers, have been moved to the La Salle-Wacker building, fortieth and forty-first floors, Chicago.

Anthony Thormin, supervising architect of the Great Lakes Exposition, announces the opening of an architectural and designing office at 1127 Prospect Avenue, Cleveland, Ohio. Manufacturers' catalogues will be appreciated.

Joseph Watterson announces the opening of an office for the practice of architecture at 1551 Franklin Ave., Mineola, L. I. He will specialize in residences, commercial work, and community planning.

Hervé Schwedersky, Johns-Manville economist, returned last month from Europe where he made a six-country study of housing and the standard of living, now plans a book for early publication.

ERRATA

In the "Houses for Needle Workers" article on the Hightstown, N. J. project in the July issue, Louis I. Kahn, assistant principal architect, should have been mentioned as co-designer of the garment workers' Homesteads.

Credit for redesigning the exterior of the apartment mentioned on page 74 of the July issue should have been given to Richard Powers as architectural consultant.

CLASSIFIED ADVERTISEMENTS

[Rates Upon Application]

WANTED—Engineers capable of and experienced in designing plumbing, heating and electrical systems for commercial and industrial buildings. Give experience, references and salary wanted. Apply Box 14, FORUM.





NO MATTER which qualities you're looking for—there's one flat paint in which you'll find them all, the "flat" made by combining Dutch Boy White-Lead with its companion product, Dutch Boy Lead Mixing Oil.

Beauty, for example. It's a paint with all the richness, solidity and *depth* characteristic of a white-lead finish . . . a paint that levels out so smooth that stippling to eliminate brush-marks becomes unnecessary . . . a paint that provides a finish fine enough for the finest interior.

Yet durable, too. So durable, in fact, that it is extensively used for sealing and finishing concrete, stucco and brick exteriors. It takes all the punishment the elements can give, defying the weather year after year.

That sort of service outside gives you some idea of how it behaves inside . . . how it stands up under repeated washing and other severe use. Also, it can be washed completely clean even after being ink-stained, pencil-marked, grease-smudged or defaced with shoe-blacking and mercurochrome.

Other advantages of Dutch Boy White-Lead and Lead Mixing Oil paint are the following: It stops suction and hides fire-cracks. It gives high coverage, averaging about 800 square feet per gallon on smooth surfaces. This, added to its quick mixing and easy spreading makes it low in first cost while its long wear and easy cleanability make it low in cost per year.

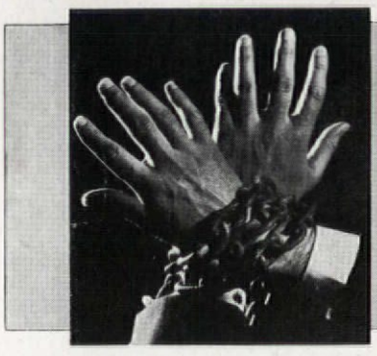
DUTCH BOY
WHITE-LEAD & LEAD MIXING OIL



NATIONAL LEAD COMPANY

111 Broadway, New York; 116 Oak St., Buffalo; 900 W. 18th St., Chicago; 659 Freeman Ave., Cincinnati; 1213 West Third St., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany St., Boston; National Lead & Oil Co. of Penna., 316 Fourth Ave., Pittsburgh; John T. Lewis & Bros. Co., Widener Building, Philadelphia.

Why Start An AIR CONDITIONING Job With Your



HANDS TIED!

To design a system that will meet all specifications demanded by owners today, you must be free to use the most important inventions developed for the art; free from fear of possible patent litigation: free from all the difficulties of experimenting. You can easily have this freedom.

Utilize the AUDITORIUM SYSTEMS and Protected AUDITORIUM PATENTS—

The Auditorium patents represent the achievements of the best minds in the air conditioning industry, and Auditorium has made all of them available to you. In this way you may secure the best features of any of the patents and systems and combine them in any system to produce the best for any particular installation.

There are more than twenty-five of these patents as well as numerous applications pending. They represent the most advanced ideas in the air conditioning art.

Systems utilizing these inventions have been installed in the most prominent air conditioned buildings since 1927. Permission to utilize any or all of the Auditorium Patents may be secured through any of the following licensees:

American Blower Corporation
Detroit, Mich.

Carrier Engineering Corp.
Newark, N. J.

General Electric Company
Schenectady, N. Y.

J. O. Ross Engineering Corp.
New York, N. Y.

The Cooling & Air Conditioning Corp.
Division of B. F. Sturtevant Company
Hyde Park, Boston, Mass.

York Ice Machinery Corp.
York, Pa.

IMPORTANT: In view of the greater volume of air conditioning business being done this year, Auditorium has recently put into effect:—

MATERIALLY REDUCED ROYALTIES

AUDITORIUM CONDITIONING CORP.
New York Office: **17 East 42nd St., New York**

Note: — All Licensees Have Bound Copies Of The Auditorium Patents Which Are Available For Reference.

PRODUCTS AND PRACTICE

(Continued from page 14)

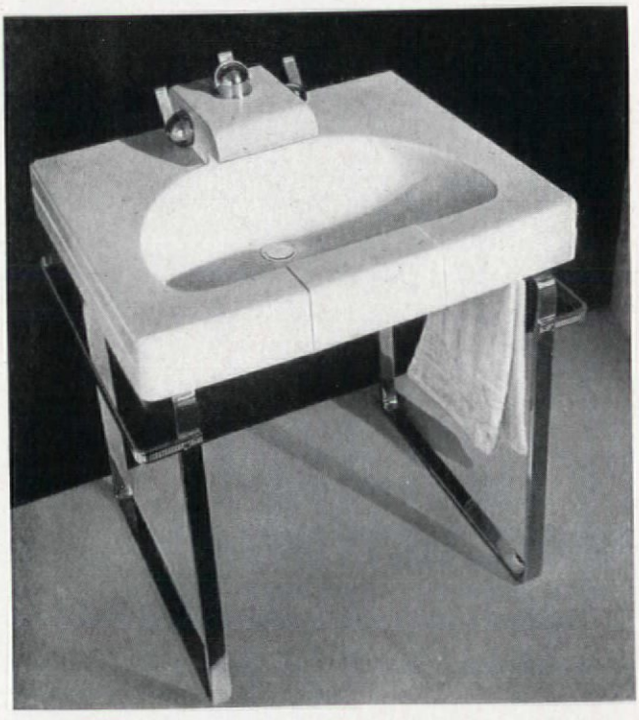
to the kitchen. The Arcode system of sectional bathrooms and kitchens is based upon the recognition of this fact, believing that a great proportion of future homes in America will be one story with the kitchen and bathroom adjacent. This system has been designed to accomplish this in a scientific way with the elimination of a wall between the kitchen and bathroom, utilizing the space between for a perfected economy of piping.

By making these sections an integral part of the structure of the house, a milestone in the mechanization of the home has been established.

NEW BATHROOM FIXTURES

The Crane Company, 47-30 29th St., Long Island City, New York, carrying out the designs made for them by Henry Dreyfuss, well-known industrial designer, have introduced their new line of "Neuvogue" bathroom fixtures.

Utilitarianism was the first consideration in the design of these fixtures. They were to be easy to clean, comfortable, and convenient to use. The illustrations show how these aims have been accomplished and combined with attractive appearance.



A feature of the lavatory is the free, easily cleaned shelf space around the bowl, which is of ample capacity. This has been achieved by the semicircular shaped bowl, and the unifying of the waste and water control fittings in a central panel which is part of the lavatory itself. A flip of the finger actuates the water or waste controls. Three different types of bases have been designed for the lavatory—a simple vitreous china pedestal, a chromium plated tubular base, and one made of flat chromium plated stock. The two latter have towel racks on the side.

One side of the tub is bowed out providing a flat seat in the center of that side. The seat is part of a decorative band which relates the design of the three pieces. The fittings are also related to those of the lavatory. The tub is made in both recess and corner types.

The Neuvogue water closet is set on a cradle which also sup-

(Continued on page 54)



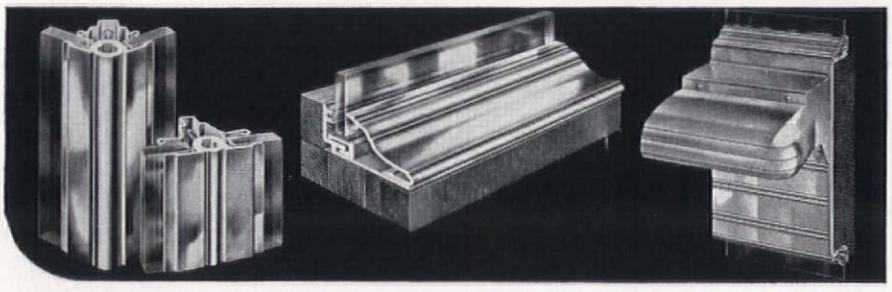
AN IMPORTANT CONTRIBUTION TO BETTER STORE FRONT DESIGN...

PITTCO
STORE FRONT METAL

PITTCO Metal is designed for use on quality fronts. Created as a complete line of members, all at the same time, it possesses a new *unity* of design, a harmonious relationship between members which opens up new possibilities in the planning of distinctive and effective store fronts. The sash is unusually deep, and serves to set off a show window to better advantage than ever before. Since all exposed members of Pittco Metal are formed by the extruded process, its contours are clean and sharply-defined. And it is available in finishes especially suited to enhance the final appearance of the fronts you design . . . Alumilited Aluminum and Architectural Bronze, Satin or Polished finish.

Pittco Metal is not only more beautiful . . . these practical qualities also recommend it: Its glass holding units are adjustable to various thicknesses; it has a new and safer double-yielding cushion grip on glass; it provides better edge protection for the structural glass used for facing; it offers the convenience of being able to set all members from the outside. When plate glass is broken after the front is completed, it can be replaced . . . from the outside . . . without disturbing the interior of the window.

Ask our nearest warehouse to give you a demonstration of Pittco Store Front Metal. And send the coupon below for our A. I. A. File Folder containing complete information, together with full and quarter size details of various applications of Pittco Store Front Metal, including its use with Carrara Structural Glass.



Paint { PITTSBURGH PLATE GLASS COMPANY } Glass

Pittsburgh Plate Glass Company,
2193A Grant Bldg., Pittsburgh, Pa.

Please send me without obligation on my part your folder containing full information on Pittco Store Front Metal and detail drawings.

Name.....

Street.....

City..... State.....



NOW

FOR THE FIRST TIME

You Can Specify SCIENTIFICALLY CORRECT RE-HUMIDIFICATION

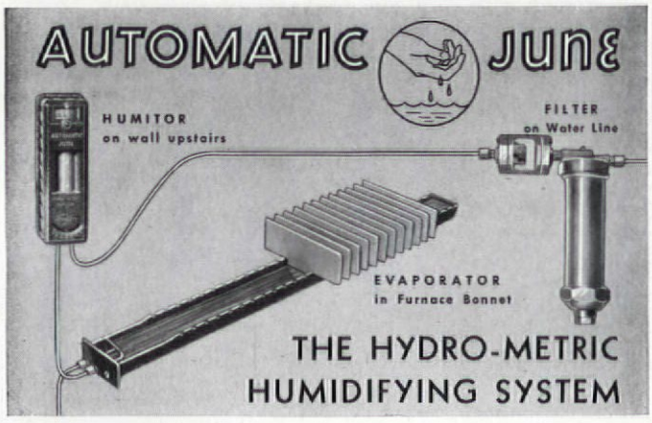
For the first time, the re-humidification of winter indoor air has been placed upon a scientific basis. In Automatic June, the newly perfected Hydro-Metric method, indoor humidity is regulated by and correlated with prevailing out-door temperatures.

For the first time, you can provide the homes you design with a winter re-humidifying system having ample evaporating capacity even at lowest furnace bonnet temperatures, but which automatically modulates the room humidity so that even in coldest winter weather there is no annoyance from heavily frosted or weeping windows.

Valuable Reference Book FREE to Architects

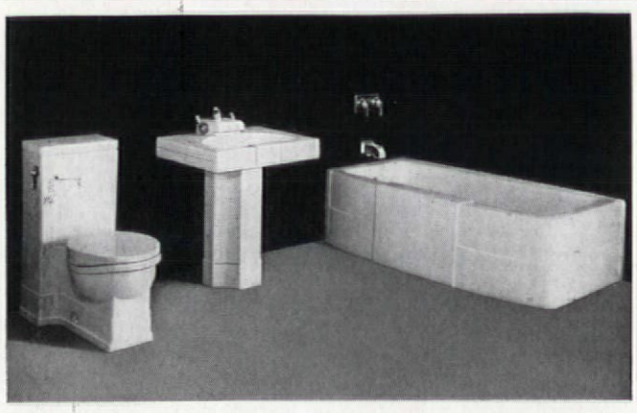
This new book, "The Science of Re-humidifying Indoor Air" is the most outstanding work on this subject ever issued. AIA file size, liberally illustrated with authoritative charts in color which picture all the facts about air humidity that architects should know. Send for your copy.

THE MONMOUTH PRODUCTS CO.
209 E. 131st Street, Cleveland, Ohio



PRODUCTS AND PRACTICE

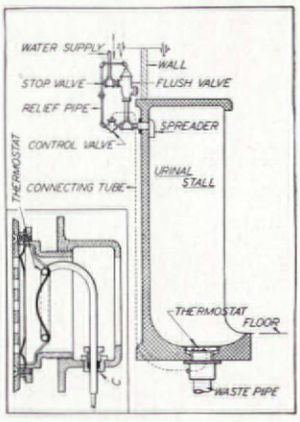
(Continued from page 52)



ports the tank. This gives unity and solidity to its appearance and conceals the piping.

A novel feature of the Neuvogue water control handles is the use of colors commonly associated with hot and cold. Fine lines of red indicate the hot water handle, blue the cold.

AUTOMATIC FLUSH VALVE



Therm-O-flush is an automatic flush valve for urinals made by the Fulton Sylphon Co., Knoxville, Tenn. It has been found that only about one out of every fourteen persons will operate urinal flush valves in public toilets; the consequent unsanitary results are well known.

Timing devices periodically flushing the urinals are apt to consume large quantities of water. The Therm-O-flush is a device that will operate automatically, eliminating all dependence on users, will improve sanitation, and will promote economy. It is thermostatically operated and automatically operates the flush valve to flush the urinal each time the urinal is used and only when used. It derives its action from the heat of the urine passing over the thermostat installed in the waste outlet. The thermostatic action operates a valve placed in the relief pipe line to relieve the pressure in the dome of the flush valve, thus giving the same flushing action as would be accomplished by manual operation of the flush valve handle.

The Therm-O-flush is not affected by variations in water pressure. No special urinal is required—it may be used with any standard urinal except types which maintain water in the bowl. The advantages of using the Therm-O-flush in schools, mental and penal institutions, public wash rooms, etc., are self-evident.

EVEN DISTRIBUTION FOR HOT WATER HEAT

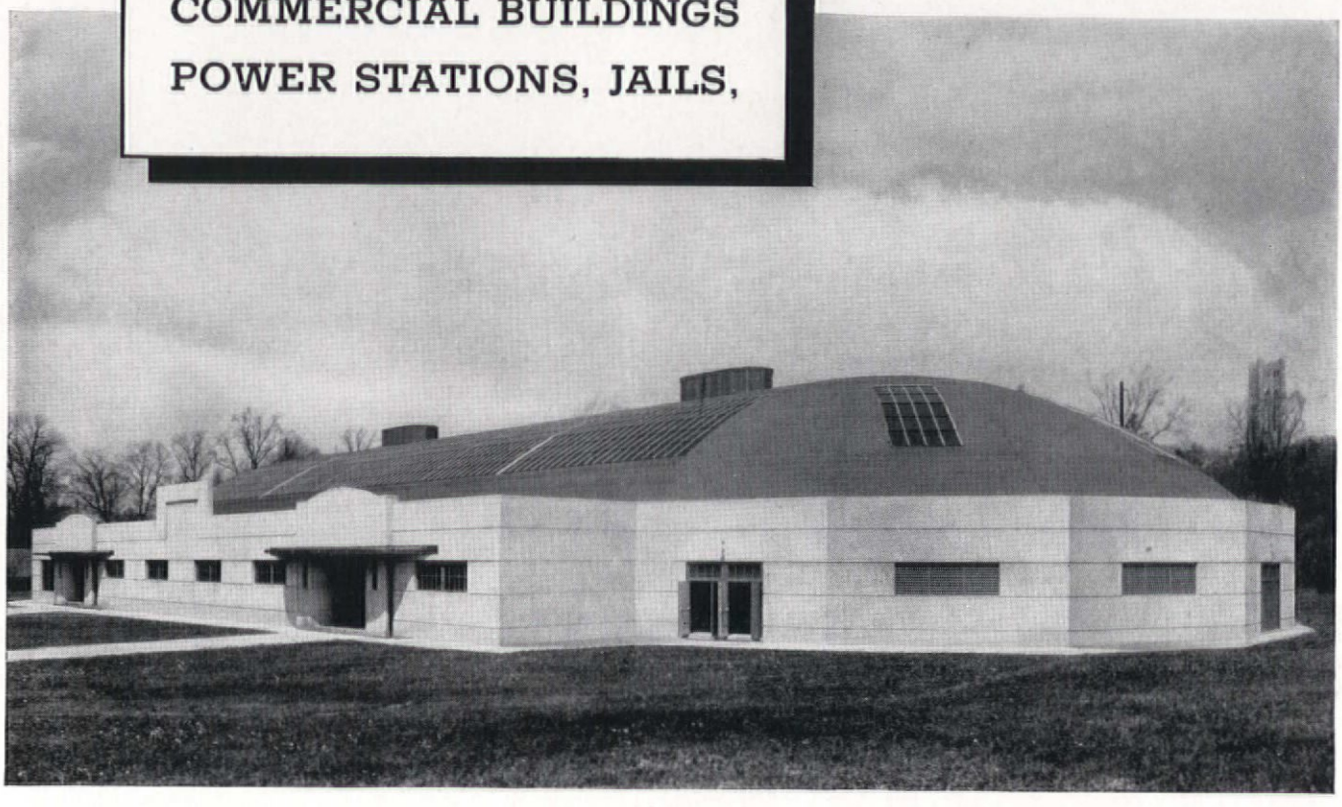
To bring the advantages of controlled heat distribution to both gravity and forced warm water heating systems, American Radiator Company, 40 West 40th St., New York, N. Y., announces the development of "Balancing" elbows and "Tight-close" radiator valves that permit the same adjustable control over hot water systems that is incorporated in the company's new one- and two-pipe steam systems.

The new "Balancing" elbows, made in ⅜ in., ½ in., and

(Continued on page 56)

CHURCHES, SCHOOLS
HOSPITALS, FACTORIES
COMMERCIAL BUILDINGS
POWER STATIONS, JAILS,

Swarthmore College field house, 326x175 ft. Walls of monolithic concrete matching in color and texture the warm buff and pink of surrounding stone buildings. Architects: Karcher & Smith, Philadelphia. Contractor: Hughes-Foulkrod Co.



AND NOW A COLLEGE FIELD HOUSE—

speak for the versatility of Concrete

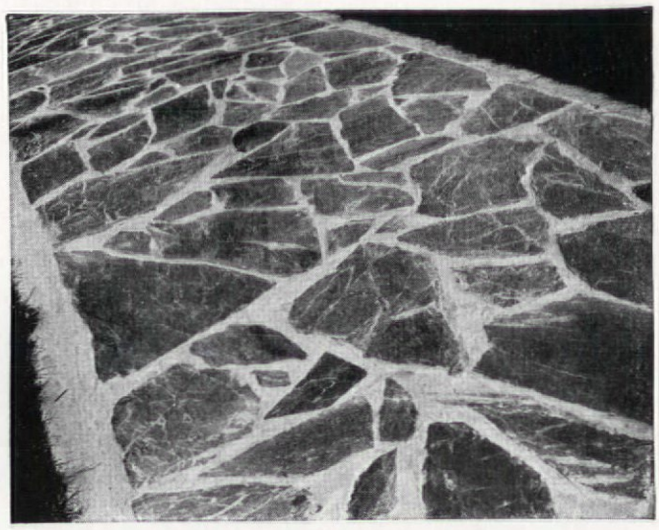
Architects with a wide range of buildings from cathedrals to warehouses tell us that concrete has greatly simplified their designing problems.

Consider the case of Swarthmore College field house. The architect was faced with the problem of selecting a material that was economical, that provided the exact surface texture desired, and that had ample strength, density and weather resistance.

Wisely, he designed the building for concrete. Using plywood forms in 4-foot panels, it was easy to obtain the surface texture wanted.

Why not plan on concrete as the combined structural and architectural medium for your next building? Take advantage of its distinctive beauty, its economy, fire-safety and permanence. Let us help by sending information sheets and the new manual, *Forms for Architectural Concrete.*

PORTLAND CEMENT ASSOCIATION
Dept. A9-7, 33 West Grand Avenue
Chicago, Illinois



MARBLE FLAGGING

FOR BEAUTY AND UTILITY

• Marble flagging, known and used by the ancients, is still the best for certain kinds of flooring. There is no material that gives more charming effects, for formal gardens, terraces and porches.

Indoors, as well as out, marble flagging offers possibilities. It can be used for vestibules, porches and loggias, where its handsome appearance, durability, as well as the ease with which it may be cleaned, are distinctly advantageous.

Marble flagging is available in a wide variety of sizes, either irregular for "crazy pavement" effects, or roughly rectangular for more formal settings. Rectangular pieces may be of random sizes or of three standard sizes, working out to a given dimension. Colors are Gray, Mottled White and Dark Green Antique. The latter comes in irregular shapes only, with some straight-edged pieces for borders.

We will be pleased to send you full details of sizes and prices. Write direct to:

VERMONT MARBLE

COMPANY

PROCTOR **VERMONT**

PRODUCTS AND PRACTICE

(Continued from page 54)

¾ in. sizes for radiator return connections, make it possible to provide the correct flow of water to each radiator after installation on either gravity or forced circulation jobs. With the adjustable baffle, that can be set after the job is in operation without draining the system, it is possible to choke the flow to radiators closest to the boiler and provide a free flow to radiators farther from the boiler, improving the distribution of heat throughout the house.

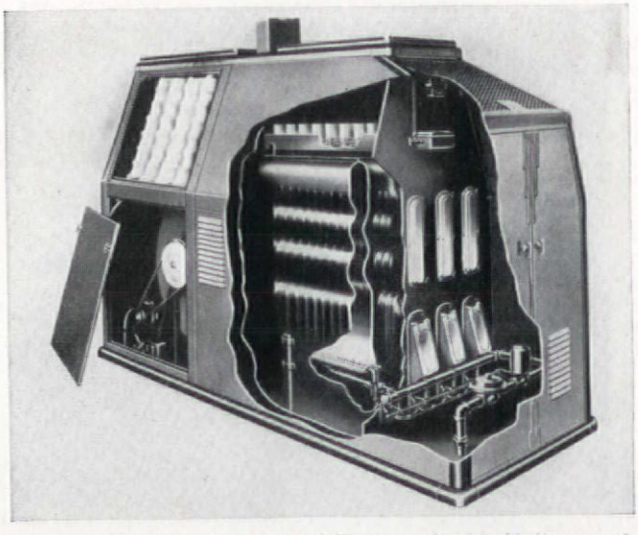


This balancing feature is also incorporated in "Straight-way" fittings, especially desirable for use on the return connection of convector radiators. Both the "Balancing" elbows and "Straight-way" fittings, besides being supplied with standard pipe thread at the bottom, are furnished with sweat connections that eliminate an adaptor on copper pipe jobs and make a neater connection.

The "Tight-close" radiator valves, made in both packless and packed types for ¾ in. or ½ in. pipe connections, employ the patented "swinging plate" feature, without the circulation hole used on the ordinary hot water valve. This plate, concentric with the bore of the valve, provides means for keeping the radiators from getting too warm, especially where a circulator is used.

The packless "Tight-close" valve, besides incorporating the packless feature which prevents leaks around the stem and eliminates repacking operations, is supplied with an equalizer that can easily be adjusted after the system is in operation to balance the flow of water and make the circulation equal to all radiators regardless of their distance from the boiler.

GAS-FIRED HEATING UNIT



The new Gar Wood Gas-fired Tempered-Aire Unit recently announced by Gar Wood Industries, Inc., Detroit, Mich., is the first of the Gar Wood heating and ventilating units which uses gas as a fuel. Heretofore all Gar Wood furnaces had been designed only for oil burning.

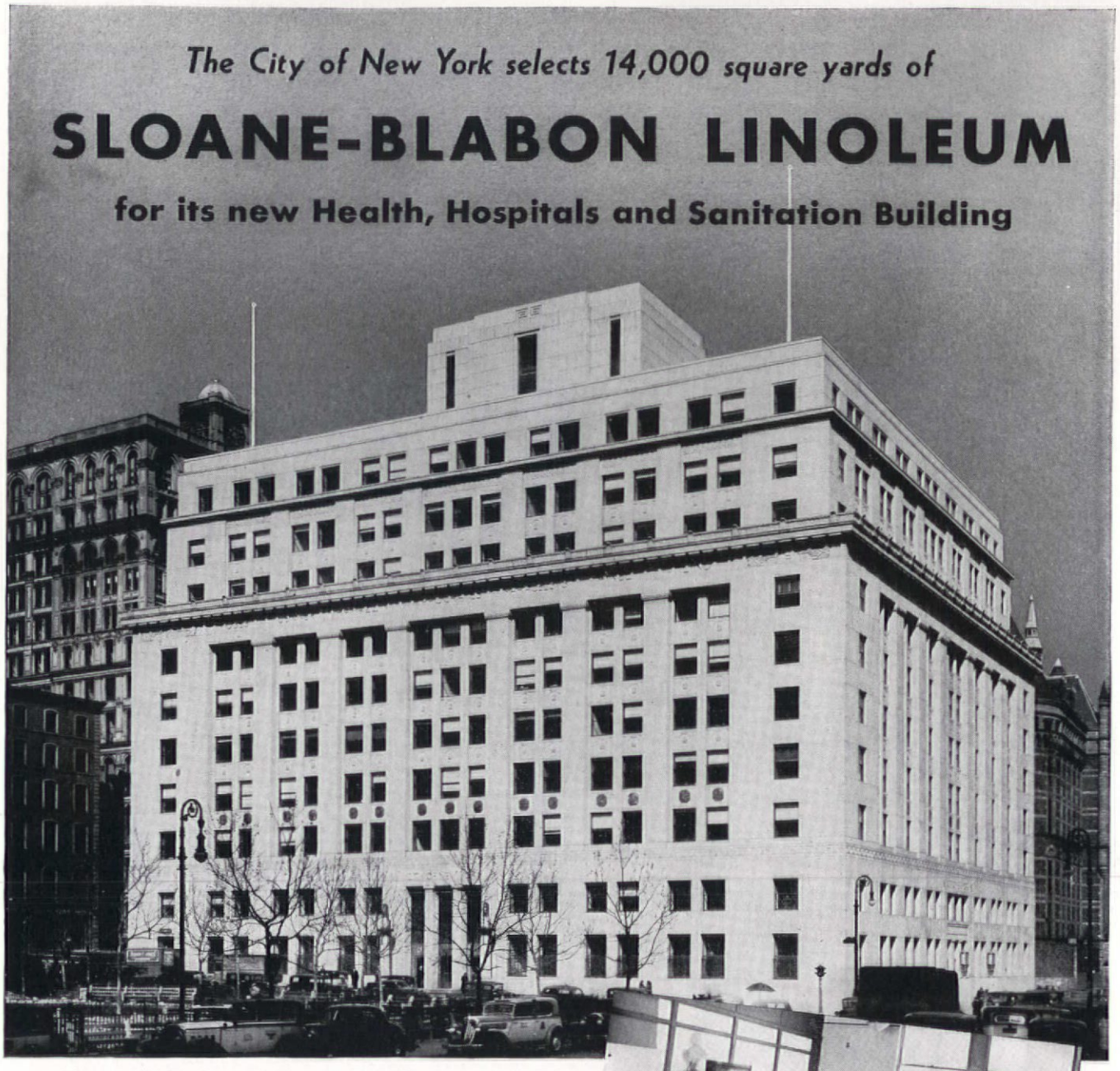
Model 120 of the gas-fired Tempered-Aire unit has an A.G.A. input of 180,000 Btu per hour, A.G.A. output of 135,000 Btu per hour, and a net room delivery of 120,000 Btu per hour; air delivery is 1,200 to 1,900 C.F.M. These units are approved by the American Gas Association.

(Continued on page 58)

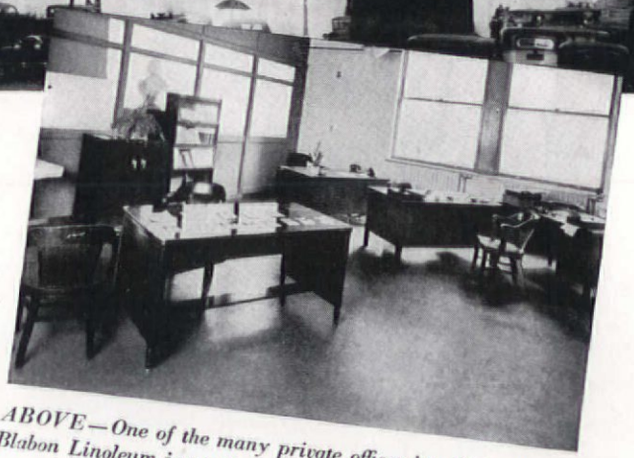
The City of New York selects 14,000 square yards of

SLOANE-BLABON LINOLEUM

for its new Health, Hospitals and Sanitation Building

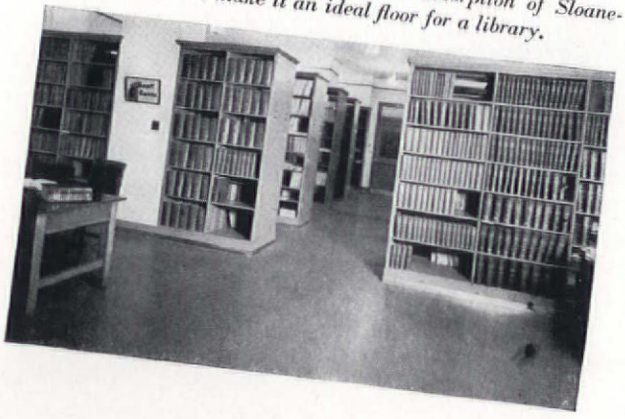


The new Health, Hospitals & Sanitation Building of the City of New York. Charles R. Meyers, architect. Strawbridge & Clothier, Linoleum Contractors.



ABOVE—One of the many private offices in which Sloane-Blabon Linoleum is used.

BELOW—The resiliency and sound-absorption of Sloane-Blabon Linoleum make it an ideal floor for a library.



For other recent installations and the complete, non-technical story of Sloane-Blabon Linoleum, send for our new Linoleum Handbook. Write W. & J. Sloane, Selling Agents Division, 295 Fifth Ave., N. Y. C.

AUTOMATIC HEAT

AND AIR CONDITIONING

to fit every need • meet every budget



OIL BURNING AIR-CONDITIONING FURNACE



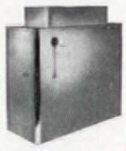
For years, leading architects have recommended Herman Nelson Equipment because of its proven quality, efficiency and practicability. Now the full value of Herman Nelson's vast experience in the field of heating, ventilating and air conditioning has been concentrated upon the development of a complete line of automatic heat and air-conditioning equipment for the residential and small commercial market.

These scientifically designed Herman Nelson products are sufficiently diversified to meet every local condition and every individual requirement. You can recommend Herman Nelson Automatic Heat and Air-Conditioning products of the same quality and efficiency you have known for years. They are made available through carefully selected distributors.

PRODUCTS TO MEET EVERY INDIVIDUAL REQUIREMENT



Self Contained Summer Air Conditioner



Oil Burning Air-Conditioning Furnace



Oil Burning Boiler



Coal Burning Air-Conditioning Furnace and Automatic Stoker



Conversion Oil Burner

herman nelson

HERMAN NELSON

Automatic Heat and Air Conditioning

GENERAL OFFICES AND FACTORIES AT MOLINE, ILLINOIS

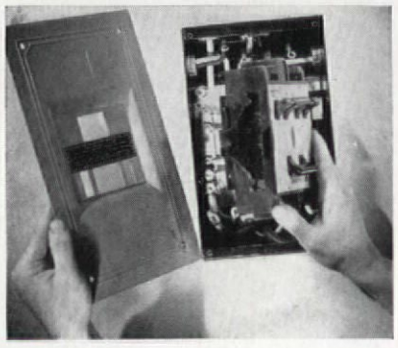
PRODUCTS AND PRACTICE

(Continued from page 56)

NEW MULTI-BREAKER LOAD CENTER

As a substitute for the conventional 115/230 volt a.c. entrance and branch circuit protective equipment, a small low-priced Multi-breaker Load Center is now being manufactured by both the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and the Square D Company, Detroit, Mich. The Multi-breaker Load Center, hinge mounted in a cabinet, consists of one or more small but





highly effective automatic circuit breakers each capable of interrupting 5,000 amperes at 115 volts a.c. This eliminates the use of fuses with the consequent interruption of service and annoyance when a fuse blows out and must be replaced. The load centers are manufactured with varying number of circuits and circuit ratings to suit all ordinary residential demands, and for 2 wire 115 volts or 3 wire 115/230 volts a.c. The branch circuit breakers are provided in ratings from 15 to 35 amperes.

The new Multi-breaker Load Center is particularly applicable for residential service, such as the control and protection of circuits supplying power or lighting, domestic appliances, ranges, and water heaters. Because of its pleasing appearance, it may be conveniently mounted in the kitchen or in a hallway close to the natural center of the distributed load, thus simplifying the house wiring. It has been possible to make the breakers extremely compact since their design involves only about one-fifth as many parts as usually employed in previous circuit breakers.

The molded housings accommodate up to four single breaker poles in the composite assembly. The common central contact eliminates many parts and joints and permits enclosing all but the line and branch circuit load terminals entirely within the sealed housings. Heating is reduced, the intended circuit arrangements are maintained by the sealed assembly, and the hazard of grounds and short circuits due to careless wiring installation is removed.

The operation of the breakers in the load center is similar to that of larger and more costly breakers. The operating handle has the usual toggle action. The cover plate is clearly marked to indicate the "on" and "off" positions of the handle. When overloads or short circuits occur, the bimetallic element deflects, releasing the contact bar, and the contacts separate. This provides a quick-break action. The operating handle automatically indicates tripped position.

If the overload is of momentary nature, or if a severe overload or short circuit has been removed, the breaker may be reset and the circuit closed. It is merely necessary to move the handle to the extreme "off" position, which resets the mechanism, and then to the "on" position to close the breaker and restore service. Should the breaker be reclosed against a continuing overload or short circuit, it will immediately trip again. The mechanism is so constructed that the contacts cannot be held in the closed position if overloads exist which would endanger the branch circuit wiring.



General offices, Southern California Edison Company, Ltd., Los Angeles
Architect: *Allison & Allison*

THEY COMPARED ALL VARIETIES OF FLOORING

AND CHOSE GOODYEAR RUBBER ON FIVE COUNTS



All railings and partitions rest on a rubber-shoe base permitting changes in departmental arrangements without marring Goodyear Rubber Tile floor

BEFORE floors were specified in the modern, electrically-heated, air-conditioned Southern California Edison Building, its architects, engineers and owners made one of the most thorough flooring surveys ever undertaken. They inspected actual installations of the various materials under consideration — *every one two years old or more* — to see how each stood up under service conditions similar to their own.

As a result Goodyear Rubber Flooring was specified for practically the entire floor area. Their investigation showed it to be outstanding in these five important respects: (1) Low maintenance cost. (2) Durability. (3) Freedom from indentation marks by office equipment. (4) General appearance after hard usage. (5) Testimony of users.

Profit by their experience and specify Goodyear Rubber Flooring wherever you want rich beauty, long wear and low cost maintenance. A product of the world's largest rubber company, it will last for years without losing its good looks, and requires no varnishing, lacquering, shellacking or waxing — just an occasional mopping — to keep permanently attractive.

Now made in two styles

Goodyear Rubber Tile — laid in individual blocks of any shape and color in any desired pattern — the last word in floor beauty. *Goodyear Wingfoot Sheet Rubber Flooring* — at lower cost — made and laid like linoleum with borders and feature strips, adaptable to more than 100,000 designs. For full particulars, write Goodyear, Akron, Ohio, or Los Angeles, California.

ONE FLOORING
that meets every specification

DURABILITY — *withstands heaviest traffic for years without appreciable wear.*

CLEANLINESS — *impervious to dirt; kept spotless with damp mop.*

FIRE- AND STAIN-PROOF — *not marred by alcohol, inks, most acids; burning matches, cigarettes and cigar stubs.*

QUIET — *its resiliency minimizes noise and gives maximum comfort underfoot.*

BEAUTY — *wide choice of rich two- and three-tone permanent colors harmonizing with any decorative scheme.*

See Sweet's 1936 Architectural Catalogue for complete specification data

THE GREATEST NAME IN RUBBER

GOODYEAR

RUBBER FLOORING



James H. Ritchie & Associates, Architects; Matthew Cummings Co., Genl. Contrs.; Western Waterproofing Co., Inc., Calking Contractors, all of Boston

Surgical, Operating and Ward Building

Boston City Hospital

BOSTON, MASS.

All Windows Calked With

PECORA — Rhino Brand — CALKING — GLAZING — Tough as his Hide — COMPOUND

Experience has proved that health, comfort and operating efficiency demand a weather-tight structure. Heat losses, dust and moisture infiltration, an increased rate of deterioration, must prevail when door and window frames are not calked.

Experience has also proved that best calking results are assured when Pecora Calking Compound is specified *and used.* When properly applied, it will not dry out, crack or chip and it is equally effective when sealing joints in similar or dissimilar materials.

For AIR CONDITIONING, Pecora Calking Compound is the ideal material for sealing door and window frames.

For further details see Sweet's Catalogue or write direct to us.



This New Type, High-Pressure Cartridge Calking Gun (patent applied for) is a great Time and Material Saver. Pecora Calking Compound is packed in Non-Refillable cartridges of approximately One Quart capacity

Pecora Paint Company

Inc.

Fourth and Venango Sts.

PHILADELPHIA

Est. 1862 by Smith Bowen

Also Makers of

SASH PUTTIES

MORTAR STAINS

SUCTION MASTIC

for Structural Glass

TECHNICAL PUBLICATIONS

LIST OF INSPECTED ELECTRICAL APPLIANCES, May, 1936 Edition, Underwriters Laboratories, 6 x 9, 295 pp., paper.

This book represents years of work by scores of specialists in the construction of electrical products. Thousands of tests conducted to determine compliance with standards of safe performance drawn by the best minds in the industry have made possible this publication which is offered by Underwriters' Laboratories free of charge to all interested parties. In its 295 pages are listed the catalogue numbers and ratings of electrical devices and materials which have passed the safety specifications and tests of the Laboratories. Products of approximately 1,500 manufacturers are included. Some of the classes of devices and materials to be found in the book are those used in the distribution of electricity in buildings and dwellings for light, heat and power. Many of the current-consuming devices used in light industrial operations and most of the domestic electrical appliances and tableware as well as electrically operated toys are included. The first requirement for inclusion in the list is that the device must be so constructed that it may be installed in accordance with the regulations of the National Electrical Code, the bible of the electrical industry. Architects, engineers, building inspectors, and electrical contractors, and others use the List of Inspected Electrical Appliances as a guide in securing products which have been tried and tested. Easy identification of products manufactured in accordance with recognized safety specifications is made possible by the arrangement of the text.

Some three thousand classifications of electrical materials are contained in the book. The grouping of all products into classes enables a reader readily to find a device of particular type and rating to meet his needs without searching through many manufacturers' catalogues. The list of manufacturers' markings in the back of the book is of advantage in identifying the maker of a device which may be found in the field. The eight-page index is completely cross-referenced so that any listed device may be located with a minimum of effort.

This latest edition of the annual supersedes all previous editions and supplements. It may be obtained on request from Underwriters' Laboratories' New York, Chicago, or San Francisco offices, or from representatives of the Laboratories in cities throughout the U.S. and Canada. Offices of the National Board of Fire Underwriters and of the National Fire Protection Association also have copies on hand for distribution.

CONSTRUCTION COSTS. 1936 Edition. Engineering News-Record. 127 pp., 12 x 9, $2.00.

All that its subtitle, "The Construction Industry Year Book," implies, the publishers of this book have compiled much useful construction industry data. Here are figures on the volume of new construction, employment in the industry, labor rates and material prices, and the cost of financing construction. Not one, but several cost indices are charted over a period of years. Unit prices bid on heavy construction jobs are listed. Of particular interest to many are the detailed cost analyses of various types of buildings, such as taxpayer construction in New York, industrial buildings, Government buildings, and a PWA housing project in Indianapolis.

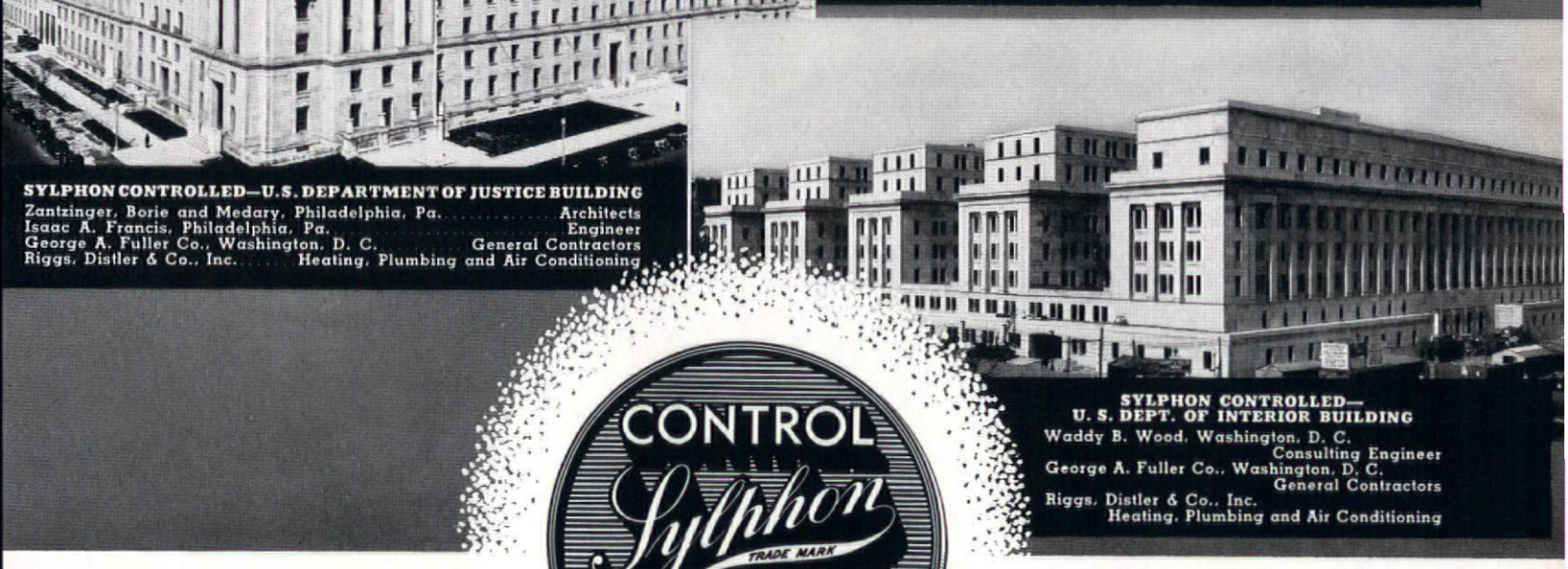
A buyers guide for twenty of the country's principal cities classifies material dealers of various kinds, trucking companies, and contractors.



SYLPHON CONTROLLED—
U. S. INTERSTATE COMMERCE COMMISSION LABOR BUILDING
Arthur Brown, Jr., San Francisco, Calif. ..... Architect
C. H. Snyder, San Francisco, Calif. ..... Engineer
James Stewart & Co., New York City ..... General Contractors
Standard Engineering Co., Inc., Wash., D. C. Heating and Plumbing
Carrier Engineering Corp., Newark, N. J. ..... Air Conditioning



SYLPHON CONTROLLED—U.S. DEPARTMENT OF JUSTICE BUILDING
Zantzinger, Borie and Medary, Philadelphia, Pa. ..... Architects
Isaac A. Francis, Philadelphia, Pa. ..... Engineer
George A. Fuller Co., Washington, D. C. ..... General Contractors
Riggs, Distler & Co., Inc. ..... Heating, Plumbing and Air Conditioning



SYLPHON CONTROLLED—
U. S. DEPT. OF INTERIOR BUILDING
Waddy B. Wood, Washington, D. C.
Consulting Engineer
George A. Fuller Co., Washington, D. C.
General Contractors
Riggs, Distler & Co., Inc.
Heating, Plumbing and Air Conditioning

CONTROL
Sylphon
TRADE MARK
SYSTEMS

SYLPHON SYSTEMS OF TEMPERATURE CONTROL FOR SPACE HEATING, VENTILATING AND AIR CONDITIONING

After years of research, development, and highly successful application and service experience in buildings of all types—the Fulton Sylphon Company now makes the first public announcement of SYLPHON CONTROL SYSTEMS for heating, ventilating and air conditioning.

Not one—but two distinct complete systems of control are offered:

1. Self-Contained Control System—This system utilizes a complete line of Sylphon self-contained, self-powered instruments requiring no auxiliary power, motors, wiring, thermostats, relays or switches. Coordinated to provide completely automatic *modulating, non-cycling* control of any or all functions of heating, ventilating and air conditioning.

2. Semi-Self-Contained Control System—This system combines the desirable features of the Self-Contained Control System with the advantages of electric operation, where electric thermostats, humidistats, time-clocks, manually operated remote station switches, etc. are desired—yet, like the self-contained system, it requires no electric motors or relays for operation.

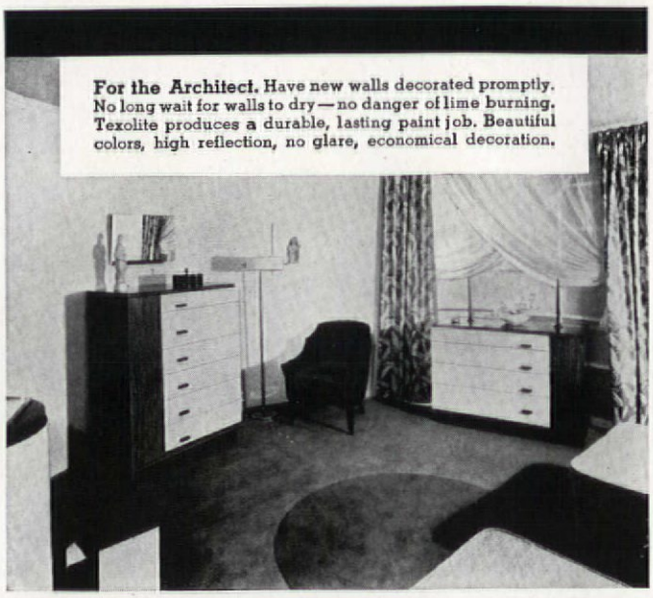
Now, whatever the control problem, you may turn to one nation-wide organization for unbiased advice on its correct solution. For in one or the other of these control systems, or among the multifarious possible combinations which they offer, will be found the ideal control result you are seeking.

Now you may centralize control responsibility in one organization who will analyze your requirements, assist you in selecting the correct system, install it, service it, and guarantee its satisfactory performance.

Get in touch with the Fulton Sylphon Office nearest you. Get the complete story of Sylphon Control Systems, the product of 35 years of experience in the application of Sylphon Controls in over 200,000 installations.

FULTON SYLPHON CO.
NEW YORK, N.Y. KNOXVILLE, TENN.

BOSTON . . . PHILADELPHIA . . . BALTIMORE . . . ATLANTA . . . CLEVELAND . . . ST. LOUIS . . . DETROIT
CHICAGO . . . SEATTLE . . . PORTLAND . . . SAN FRANCISCO . . . LOS ANGELES . . . DALLAS
and in 35 other principal cities in the U.S.A., Montreal, Canada and London, England.



For every color

from brightest shades to softest tints

TEXOLITE

CASEIN WALL PAINT

■ No matter what color effect you wish, Texolite* will help you get it. Soft, exquisite tints—subtle blends—brilliant contrasts—all are possible with this unique paint.

Here's the reason. In addition to ten beautiful pastel shades and white, Texolite comes in nine deep, brilliant colors. By adding these Texolite Deep Colors to white Texolite, unlimited color blends can be obtained.

Moreover, Texolite affords a high degree of glareless light reflectivity. Texolite surfaces provide a soft, flat sheen which reflect as much as 90 per cent of the light which strikes them. For full details of this economical, non-fading paint mail the coupon below. A free sample can will be mailed you promptly.

TEXOLITE HAS THESE ADVANTAGES

1. Hides in one coat.
2. Dries in one hour.
3. No paint odors.
4. Does not yellow.
5. No brush marks.
6. Reflects more light.
7. One gallon makes one and one-half gallons of ready-to-use paint.

TRY TEXOLITE AT OUR EXPENSE

Architects who have specified Texolite are enthusiastic about its advantages—its beautiful colors, its economy. Mail coupon today. We will send you complete information and a FULL QUART OF TEXOLITE absolutely FREE.

* Registered Trade-mark

UNITED STATES GYPSUM COMPANY AF-9
300 West Adams Street, Chicago, Illinois

Please send me, free of charge, a sample full quart can of Texolite Paint, together with a sample of Texolite Deep Color and handy Color Guide.



My Name.....

Address.....

City..... USG Phone No.....

UNITED STATES GYPSUM COMPANY

MANUFACTURERS' PUBLICATIONS

Among the manufacturers' publications recently received of interest to the architectural profession were the following:

ELECTRIC HEATER
Wesix Electric Heater Co., 390 First St., San Francisco, Cal., 631 San Julian St., Los Angeles, Cal., and 2008 Third Ave., Seattle, Wash.—a folder describing their bathroom electric heater, built in, fully automatic.

GAS BOILER
National Gas Heating, Division of National Radiator Corp., Johnstown, Pa.—a specification of their gas boiler.

COPPER PIPE
Bridgeport Brass Co., Bridgeport, Conn.—a booklet describing their copper water tubing.

PAINT
National Lead Co., 111 Broadway, New York, N. Y.—painting specifications covering the use of Dutch Boy products—paint formulas for various purposes, their coverage, and how they should be used.

AIR CONDITIONING
Carrier Engineering Corp., 850 Frelinghuysen Ave., Newark, N. J.—a chart to help determine whether air conditioning in an office building will pay its way. Also a catalogue of an attractive unit heater—the Kroy.

STEEL JOISTS
Concrete Engineering Co., Omaha, Neb.—a catalogue of Ceco open web steel joists.

METAL WINDOWS
Concrete Engineering Co., 1926 South 52d Ave., Chicago, Ill.—catalogue of Ceco metal windows, screens and weatherstrips.
Vento Steel Sash Co., Inc., Muskegon, Mich.—catalogue of metal windows.

FIREPROOF CONSTRUCTION
Concrete Engineering Co., Omaha, Neb.—a handbook of fireproof construction cataloguing their materials for this type of construction.

GLUE
The Resinous Products & Chemical Co., Inc., 222 W. Washington Square, Philadelphia, Pa.—a booklet describing Tego, a glue film for bonding wood—used for most of the moisture resistant plywood.

EXTERIOR WALL AND ROOF COVERINGS
The Barber Asphalt Co., 1600 Arch St., Philadelphia, Pa.—a new booklet of Genasco shingles, sidings, and roofings.

WIRING
Anaconda Wire & Cable Co., 25 Broadway, New York, N. Y.—a wiring handbook illustrating and describing wiring and insulation for various purposes.

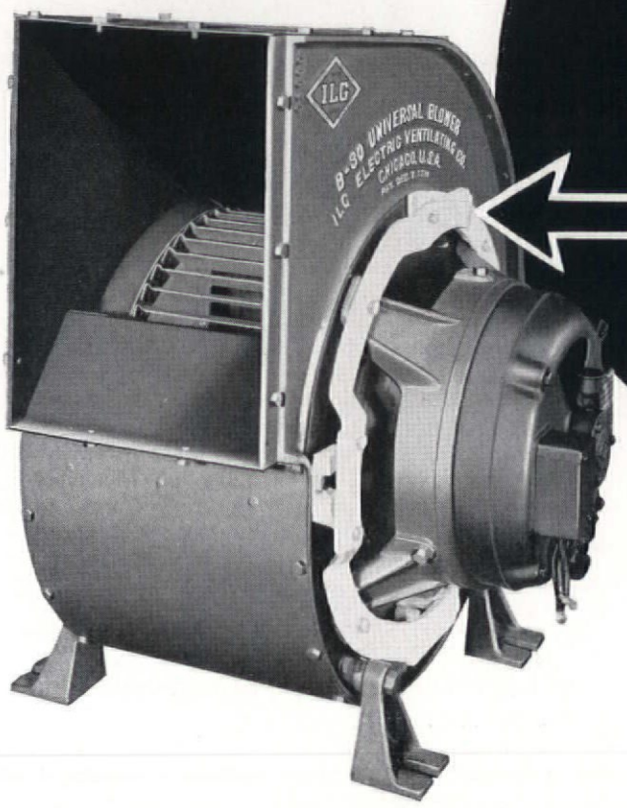
LIGHTING
Kliegl Bros., 321 West 50th Street, New York, N. Y. Catalogue No. 40 of the many types of Kliegl lighting equipment for theatrical, decorative, and spectacular purposes.

GARAGE DOOR
Crawford Door Co., 7881 Conant Ave., Detroit, Mich.—pamphlets on their overhead garage doors.

To obtain any of the publications reviewed above, please communicate directly with the manufacturer. The literature can be accurately identified by mentioning this issue of The Architectural Forum.

Have you heard about

THE *New* ILG BLOWER FEATURE?



Floated-Drive

QUIET . . . *as a whisper* . . . SMOOTH RUNNING

Ilg, the pioneer of many distinctive improvements in ventilation, heating, and air conditioning, now offers another development in blower engineering. It's the Ilg Floated-Drive bracket for installations requiring maximum silence and vibrationless operation.

The standard Ilg motor bracket is mounted on a second, floating bracket which is insulated from the blower housing by flexible rubber cushions. There's no metal to metal contact. What's more the Ilg method of direct connection in which the blower wheel is mounted directly on the motor shaft, permits the isolation of both motor and wheel as a single unit when this Ilg Floated-Drive is used. Mail coupon for specific details and the new Ilg Blower Book.

FITS TYPES "B" AND "BC" ILG UNIVERSAL BLOWERS

The new Ilg Floated-Drive can be easily and quickly mounted on any Ilg Type "B" or "BC" Direct Connected Universal Blower at any time. Four-point vertical floating of the weight assures silent operation.

ILG

VENTILATION
and Air Conditioning

ILG ELECTRIC VENTILATING CO.
2899 N. CRAWFORD AVE., CHICAGO, ILL.



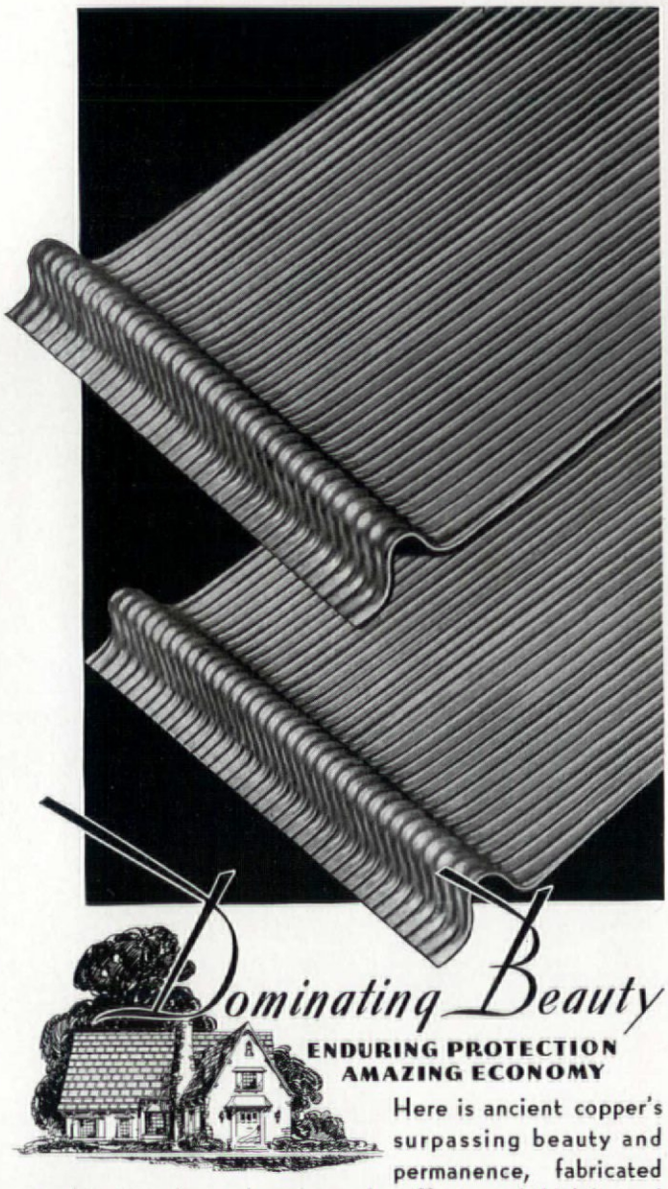
ILG ELECTRIC VENTILATING CO., 2899 North Crawford Avenue, Chicago
Without obligation, send your new illustrated Blower Book; also specific information on the Ilg Floated-Drive.

NAME _____

FULL ADDRESS _____

_____

Now On . . . . . the Press!
The New Ilg Unit Heater Catalog. If you desire a copy check here → ☐



Dominating Beauty

ENDURING PROTECTION
AMAZING ECONOMY

Here is ancient copper's surpassing beauty and permanence, fabricated into shingles whose charming color effects and thick-butted shadow lines provide roofs said by many to be "the crowning achievement in the art of roofing." Never before have copper shingles utilized copper's ideal suitability for roof construction—and eliminated the few disadvantages of old type copper shingles. Note the unusual construction of these Kenmar roofs—see how they will enhance the charm of the homes and public buildings you are planning. Write for samples and data—in Kenmar's complete, clear, concise A. I. A. file folder. Please address "Dept. 59."

Note these important advantages—
FOUR CHARMING COLORS
Copper Green, bright copper, oxidized copper, lead coated copper.
THICK-BUTTED CORRUGATED CONSTRUCTION
Provides unusually beautiful shadow lines. Takes up expansion—increases insulation.
RANDOM SPACING—ASSORTED WIDTHS
Gives freedom in decorative effect.
LOWEST COST PER YEAR OF SERVICE
With Kenmar, you roof once and for all time.
FIREPROOF — LIGHTNING PROOF WEATHERPROOF

KENMAR
Solid Copper
SHINGLES

Manufactured only by
The New Haven Copper Company
Manufacturers of Sheet Copper Since 1849 Seymour, Connecticut, U. S. A.

BOOKS

(Continued from page 30)

drawings as well as text that such a method leaves considerable freedom for the architect and also that any limitations imposed by the use of the module are no greater than the structural limitations which have existed in all periods.

The value to the architect of module design at the moment is obviously not very great, since materials and equipment conform roughly at best to any standard units which might be adopted. That the progressive architect should be familiar with this method, however, is an entirely different matter, since his influence on the manufacturer can be considerable and he can do much to accelerate the present trend towards standardization. This trend is bitterly opposed by men who still believe that architecture is produced by copying ancient monuments, but the trend exists and must inevitably develop. In this connection Walter Gropius' words may be of some comfort to the objectors: "The standard is no obstruction to cultural development but, on the contrary, is one of its underlying conditions . . . the story about the individual being outraged by standardization dwindles into nothing when we look into history."

The last half of the book consists of a review of all attempts to modernize structure. Each structural system is clearly illustrated with isometric drawings and is fully described, bibliographical references being given in all cases.

Taken as a whole "Rational Design" is a most comprehensive and intelligent survey of the pioneering efforts in housing, and is one of the most forceful arguments yet advanced for the application of our production methods to the industry that is in the greatest need of them.

SPECIFICATION 1936, edited by F. R. S. Yorke. The Architectural Press, London. 730 pp., 8¾ x 13. 12s. 2d.

This annual is the recognized English authority on building materials and methods. A reference for the architect, it presents its information in sections divided by trades and contains advertisements which are inserted in the sections to which they refer. The trade sections are revised annually, providing an extremely convenient means of keeping the architect up to date on the latest developments. In addition, there are a number of articles on various phases of building, prepared by authorities in their respective fields. Many of the trade sections are copiously illustrated with drawings and diagrams. The best work of its kind in English, "Specification" should be better known by American architects and specification writers.

TEXAS MISSIONS, by Charles Mattoon Brooks, Jr. Dealey and Lowe, Dallas, Texas. 154 pp., 20 photographs. $2.50.

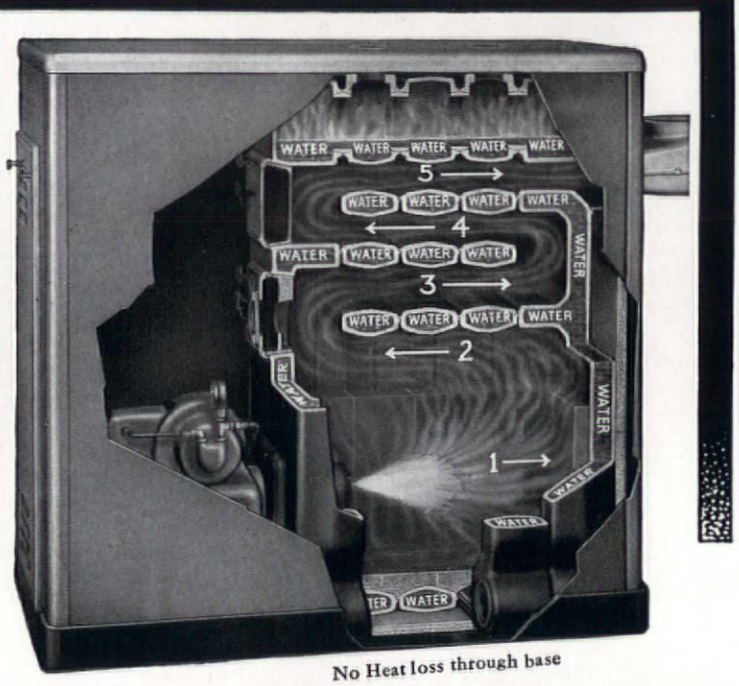
A study of the little-known missions of Texas, presented in a manner which combines both historical and technical data. Of about thirty missions which remain, only two are reasonably intact; the remainder are ruins, some with no more than the foundation walls to show the form of the original building. With this paucity of material, the author has concentrated on the few remaining structures, and on the stories of vanished churches recorded by earlier historians. The book has been printed in brown ink on yellow paper, a combination which does not facilitate reading, and which destroys whatever quality the photographs might have had.

(Continued on page 66)

A Firing Chamber COMPLETELY Surrounded *by* Water

Plus

5-WAY heat travel



No Heat loss through base

The FIRST *Oil-Burning Boiler to Combine these* 2 Important Features

A SPECIALLY designed OIL-HEATING unit that gives *more* heat! That gives *greater* economy! That combines TWO IMPORTANT HEATING FEATURES never before available in a single oil-burning unit. Bringing you all the improvements developed during 97 years of progressive heating engineering experience.

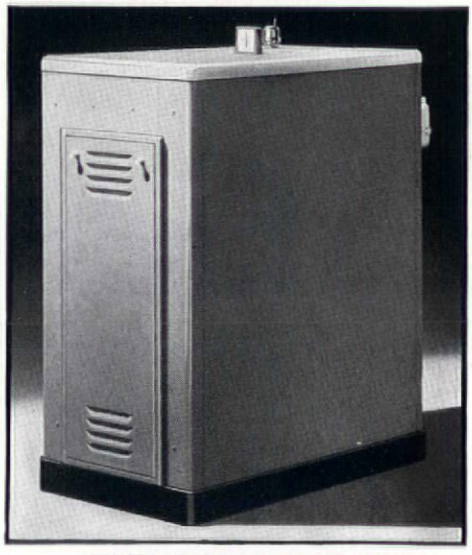
See for yourself from the illustration that the Pierce firing chamber is completely surrounded by water—even at the bottom. That it has no heat losses through the base where all ordinary boilers waste heat.

And see the *5-way heat travel:* How the flame makes *two complete passes* in the firing chamber. How it is then drawn back and forth three times through narrow flues, releasing the highest possible amount of heat units to the water.

Outstanding advantages that have been tried and proved in hundreds of tests . . . in actual homes during the last severe winter.

And the Pierce is entirely automatic. It will operate with any standard oil burner. It is made in sizes to fit all homes. It is the ONLY oil-burning boiler of its type with a range up to 3,000 feet of steam radiation. Write today for the free booklet that will tell you ALL of its advantages.

PIERCE BUTLER RADIATOR CORP.
Syracuse, New York



FEATURES

★ Designed exclusively for oil. . . For steam, hot-water or vapor heating systems. . . Completely automatic—requires no attention. . . Low oil consumption. . . . Attractive jacket, insulated against heat and sound. . . Adaptable to any oil burner. . . Front or rear firing.

Oil-Burning Boilers
Coal-Burning Boilers
Conversion Oil and Gas Boilers
Ames High Pressure Boilers
Stoker-Fired Boilers
Steel Boilers
Radiation
Ames Una-Flow Engines

PIERCE

OIL-BURNING BOILER

Mail this coupon today»»»

PIERCE BUTLER RADIATOR CORP.
701 Nichols Ave., Syracuse, N. Y.
Send me, without obligation—

☐ Folder and full information on Pierce Oil-Burning Boiler.

☐ Pierce Catalog showing your complete line of heating equipment.

Name.....

Address.....

WATERFILM BOILER

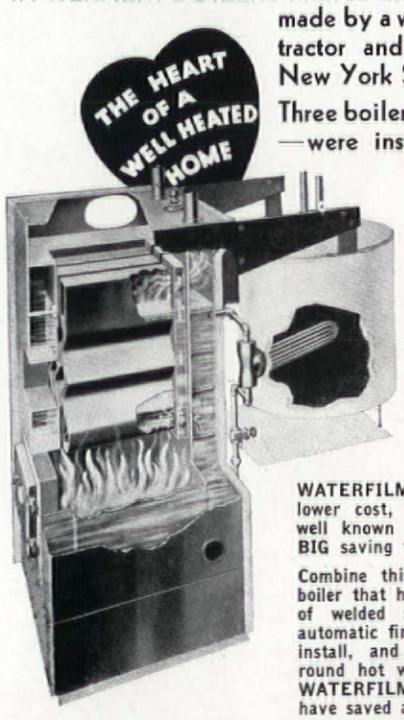
Showed a big saving in oil over two other leading steel boilers!



In actual operation the Waterfilm boiler showed a substantial saving

When a product proves conclusively its superiority you should investigate its sales bringing possibilities.

WATERFILM BOILERS showed their superiority in a test made by a well known heating contractor and oil burner dealer in New York State.



Three boilers—one a WATERFILM—were installed in three similar homes, alike in amount of radiation and heating conditions, etc. Here's the way WATERFILM performed on the job.

Boiler B—used 500 gallons of oil

Boiler C—used 490 gallons of oil

WATERFILM—used 324 gallons of oil

WATERFILM operated at 35% and 34% lower cost, respectively, than two other well known boilers! And that means a BIG saving to your clients.

Combine this outstanding feature with a boiler that heats quickly and cools slowly, of welded steel construction, built for automatic firing, simple and economical to install, and insuring an abundant year round hot water supply and you have a WATERFILM BOILER that is known to have saved as much as 50% on fuel bills.

Write today for full information on the WATERFILM BOILER.

WATERFILM BOILERS, INC.

154 Ogden Ave. :: Jersey City, N. J.

THE FLASH  BOILER STABILIZED

A KOVEN PRODUCT

BOOKS

(Continued from page 64)

HELLENISTIC ARCHITECTURE, by Theodore Fyfe. The University Press, Cambridge; The Macmillan Company, New York. 247 pp., illustrated, 9¼ x 6½. $6.00.

There is a vast amount of material on Hellenistic architecture, some of which is to be found in the general histories and much in the numerous monographs on the important buildings of the period. This volume, however, is the first to be devoted in its entirety to Hellenistic architecture as a whole. The term "Hellenistic" is used in its

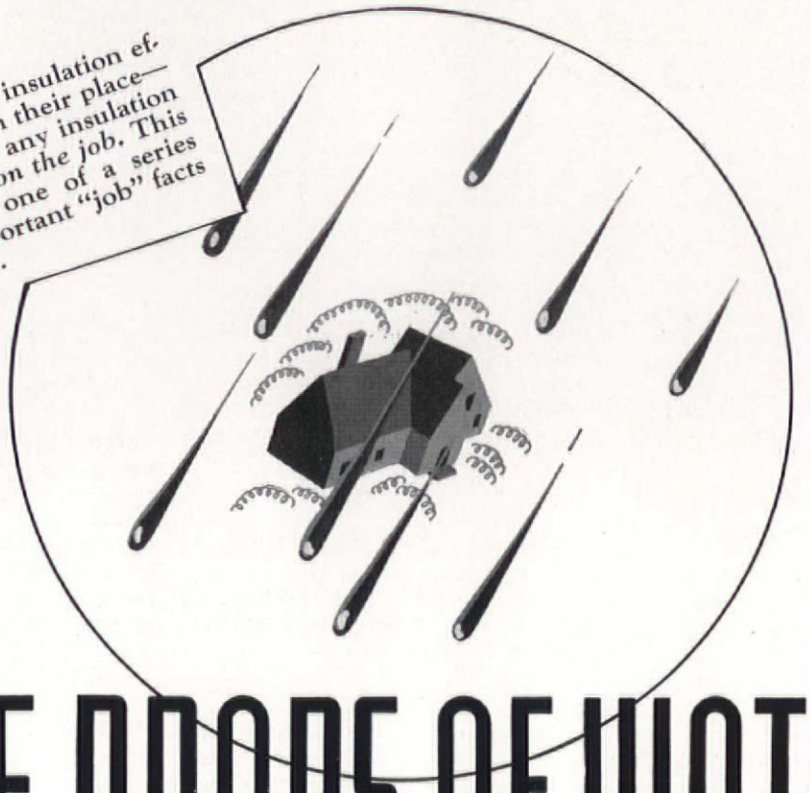


ROCK-CUT TOMB, ALEXANDRIA

stylistic rather than historic sense and has led to the inclusion of work which dates two and more centuries after the Roman domination. There is an introductory chapter devoted to the development of the style, to its Greek background, and to the centers in which it developed. The material is organized into building types rather than on a chronological basis, and in addition there are chapters on the orders, details, decoration, construction techniques, and civic design. The last-mentioned chapter is of particular interest. Many building types were introduced or developed in Hellenistic times, and the Stoa, a double portico with shops along the back, was an important plan unit that later became the colonnaded street. Plans of Corinth, Priene, Delos, Pergamum, and other towns are shown. While primarily for the architect and archeologist, the book preserves as far as possible a non-technical approach. It is well illustrated with photographs and sketches and there are many measured drawings of details and complete buildings.

As a service to interested readers, The Architectural Forum *will undertake to order copies of foreign books or others not conveniently obtainable locally, which have been reviewed in this department. Checks or money orders, payable to* The Architectural Forum, *to be sent with orders.*

● Laboratory tests of insulation efficiency are useful in their place—but the final test of any insulation is what it will do *on the job*. This advertisement is one of a series dealing with important "job" facts about insulation.



LITTLE DROPS OF WATER

. . . don't let them spoil insulation value for YOUR clients!



Certainly you want to give your clients the most insulation value per dollar spent.

Then be sure that the insulation you specify is *fully* protected from moisture! For water and water vapor are deadly enemies of insulation. A good insulation material must be amply and positively protected from condensing moisture in walls, ceilings and roofs.

Balsam-Wool Blanket Insulation is *sealed* in a tough, waterproof covering. Moisture cannot get into this insulation to rob it of efficiency. There can be no condensation within the material to cause decay of framing members. Season after season, year after year, Balsam-Wool retains its high insulating value.

Unlike materials that are merely hand-packed or blown in, Balsam-Wool is fastened in place. It assures you of getting *continuous* insulation, with no uncovered spots for the wind to blow through. Balsam-Wool does not settle . . . does not change its form. In addition, it is vermin-proof and highly fire-resistant.

Balsam-Wool enables you to specify the right amount of insulation for every building and every climate. It comes in *three* thicknesses. With Balsam-Wool, you need never waste money by specifying *too much* insulation . . . never run the risk of specifying *too little*.

Complete information about Balsam-Wool is yours for the asking.



BALSAM WOOL

WOOD CONVERSION COMPANY

WEYERHAEUSER FOREST PRODUCTS

Made By The Makers of
NU-WOOD

ST. PAUL · · · MINNESOTA

Products of Weyerhaeuser

LETTERS

(Continued from page 22)

Forum:

I should like to make the following corrections to the statement concerning public building in THE FORUM, July, 1936 issue:

Although as stated, the A.I.A. in its last convention in Williamsburg passed a resolution that "Resolved, That the Sixty-eighth Convention does not express itself in selecting architects for public work" this was not the last and final action of the Convention. On a later date the following resolution presented by the Committee on Resolutions was adopted without dissenting vote:

"Resolved, That the architectural competition, conducted under suitable safeguards, is a method for the selection of the architect for public buildings which should receive thoughtful consideration from The Board of Directors, as being a possible solution to some of the difficulties facing the Government, the private architect and The Institute."

It might also be of interest to you to know that previous to the Convention, the Philadelphia Chapter of the A.I.A. adopted a very strong resolution in favor of competitions as a method of selection of architects for public work.

It is my earnest hope and the hope of many of the profession that this matter can be kept alive to maintain a true democracy amongst us in our relationship to the government. Competitions are essential in order that architecture shall progress in design. The sort of government bureaucracy which dictates the facade, the height of orders, etc., must go, and the competition is the only substitute which the profession can offer that has any promise to the government and to the profession that the architecture erected will be the best.

From the profession's own standpoint, not only is the actual publicity accruing to a competition woefully needed, but the stimulation and the effort necessary to win one is all too little evident in the buildings recently built by the government.

THOMAS PYM COPE

Philadelphia, Pa.

Correct is Architect Cope about the second resolution, but correct is FORUM in reporting that "The Sixty-eighth Convention does not express itself concerning methods of selecting architects for public work."—ED.

Forum:

. . . In one respect your statement following reproduction of the Burnham letter is inaccurate, where you state: "The law, after this, was practically abandoned, and in 1912 it was repealed by Congress, 'in spite of opposition by the country's entire architectural body.' "

The law was not abandoned after Carlisle's time. The Tarsney Act left it optional with the Secretary of the Treasury to select the architect for a specific public building by competition. Mr. Carlisle never made use of the Tarsney Act. Lyman J. Gage became Carlisle's successor in the Secretary of the Treasuryship in the McKinley Administration. Secretary Gage did make use of the Tarsney Act. There were competitions held for the selection of an architect for the New York Custom House (Cass Gilbert, architect), the courthouse and post office at Denver (Tracy & Swartwout, architects), the post office and courthouse in Indianapolis (Rankin, Kellog & Crane, architects), and others that do not now come to mind.

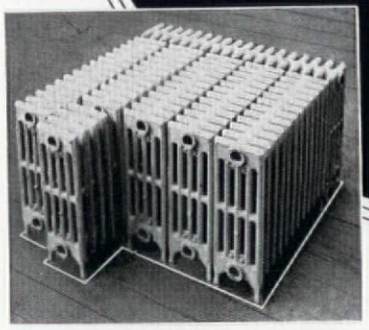
Successors of Secretary Gage also made use of this option in the Tarsney Act. There must be no less than a dozen large federal buildings scattered around the country whose architects have been selected under the Tarsney Act. The Tarsney competitions, however, were limited competitions where architects of reputation and achievement were selected and invited by the Secretary to compete.

ARTHUR WOLTERSDORF, F.A.I.A.

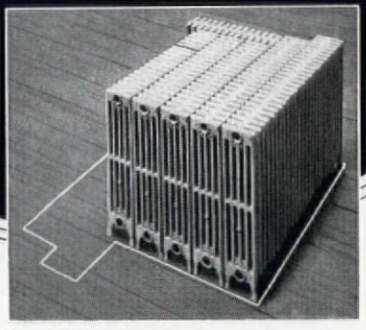
Chicago, Ill.

Architect Woltersdorf discovered a slip in FORUM's condensation of historical material culled about the Tarsney Act. From 1897 until 1912 when the Act was repealed architects received $1,500,000 as commission on 34 public buildings, costing each over $28,000. Largest fee to Cass Gilbert's New York Custom House;

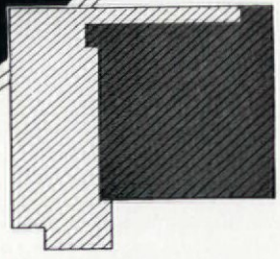
(Continued on page 70)



This group of old style tube-type radiators are what would be needed to heat the average 7-room house.



Here are the Slenderized ones to do the same 7-room heating job. Note by the marking on the floor how much less actual space they take.



To make it still plainer, here is a plan view. The dark portion is the Slenderized.

Still More Evidence That
The Burnham Slenderized Radiators Take Up 40% Less Room

It's a hard thing to believe, that a cast iron radiator that is 40% smaller, will do the same heating as the larger one. It is still harder to accept the fact, that although 40% smaller, the Slenderized one heats 40% quicker.

Still, if such were not the facts, you can well imagine the position we could be put in making such a statement. The result might well be disastrous to the Burnham reputation.

If you will just read the captions under the above three cuts, you will find it easy to accept the 40% less room statement. As for the 40% quicker heating, if you doubt it, just drop us a line, or better yet, send for the Slenderized Radiator Book.

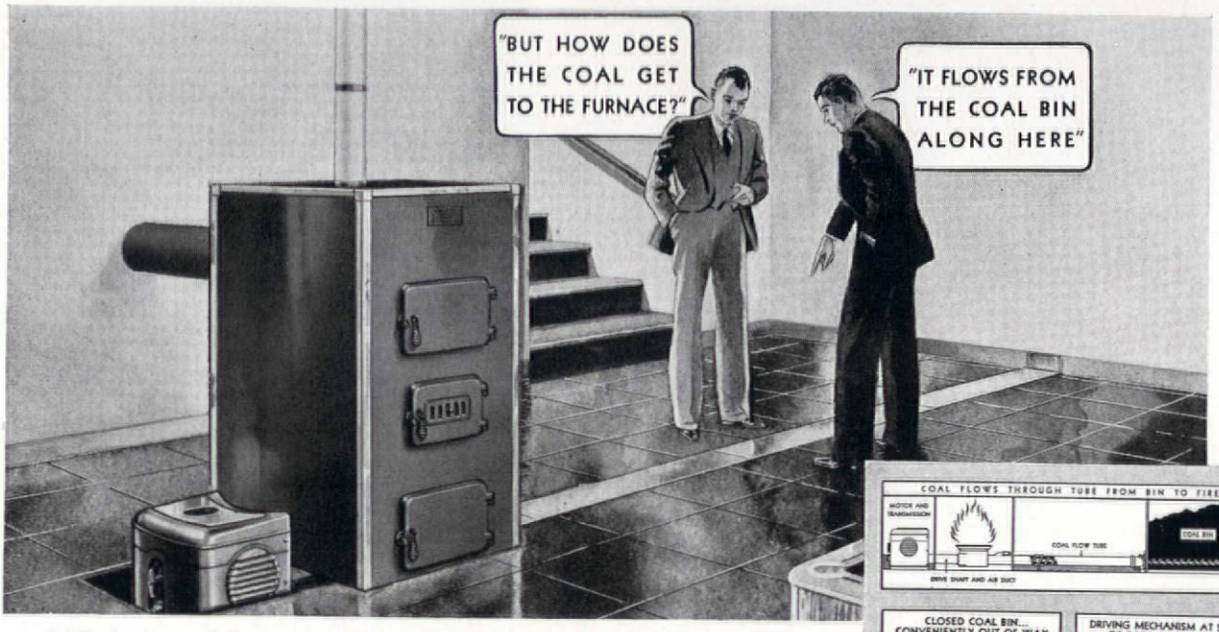
Irvington, New York — Burnham Boiler Corporation — Zanesville, Ohio

REPRESENTATIVES IN ALL PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

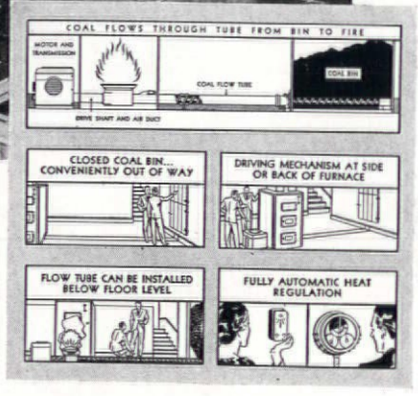
Specify The IRON FIREMAN

COAL FLOW

The finest and most economical automatic heating equipment



Coal Flow in a hot water boiler. Equally well adapted to steam or vapor-vacuum boilers and warm air furnaces



Iron Fireman brings you this latest coal firing convenience

DOES AWAY WITH COAL HANDLING

IN A YEAR when home building is showing a definite increase; when architects, builders and their clients are thinking definitely of automatic home heating, Iron Fireman is happy indeed to present its new *Coal Flow* model.

With the development of this advanced automatic burner, coal goes completely modern and automatic. As the name implies, coal *flows* from bin to fire. From the time that the coal is put into the bin until it is transformed into useful heat in the furnace or boiler, it is an invisible, self-serving fuel.

Like all Iron Fireman burners, the *Coal Flow* uses inexpensive sizes of coal. The burner achieves combustion efficiencies fully as high as liquid or vapor fuels. This high heating efficiency combined with low fuel cost enables an Iron Fireman burner to cut fuel bills from 15% to 50% over hand-firing, and from 25% to 75% over other types of automatic heating.

Coal Flow models are available to fit practically every type of heating plant and basement arrangement. The distance the coal is conveyed and the location and size of the bin can be varied greatly. This wide flexibility makes possible installations that are specially designed to fit the most diverse individual requirements.

Iron Fireman prices are the lowest in history. A *Coal Flow* model may be purchased for as little as $10.72 a month, with a small down payment; standard hopper models for as little as $8.97 a month.

We suggest that you write for complete descriptive information, or get in touch with your local Iron Fireman dealer. Iron Fireman Manufacturing Company, Portland, Oregon; Cleveland, Ohio; Toronto, Canada. Dealers everywhere.

THE IRON FIREMAN

NOW ON DEMONSTRATION AT IRON FIREMAN DEALERS

An Iron Fireman for every firing job


RESIDENTIAL


INDUSTRIAL

There is an Iron Fireman for every firing job; for firing every type of coal—bituminous, anthracite, lignite—and for firing practically every kind of furnace and boiler from a small residential warm air furnace up to industrial boilers developing 500 horsepower. Illustrated literature will gladly be sent to you free upon request.

SEND FOR FREE LITERATURE

IRON FIREMAN MANUFACTURING CO.
3085 W. 106th Street, Cleveland, Ohio.

Gentlemen: Please send full particulars about the Iron Fireman *Coal Flow* for:

☐ Residence ☐ Large Heating Plant ☐ Power Boiler

Name.....

Address.....

LETTERS

(Continued from page 68)

best remembered today, Boring & Tilton's Ellis Island. Bookishly minded readers are referred to Charles Moore's "Life of Daniel H. Burnham," 1921; Vol. 1, Chapter VIII wherein details are described at length.—Ed.

Forum:

. . . Our attitude has on the whole remained hostile to the competitive plan. We have argued with our clients and with public authorities that the temptation to resort to cleverness in order to win the prize, is universal. If the architect himself rises above it, he can't at the same time lift all his draftsmen to the same rarefied plane. Promises in colored perspective are easy to make and hard to keep.

The method and the procedure might be narrated as follows:

"Well," says the Chairman of the Building Committee, "how shall we pick an architect?"

Now the building is to be a $1,000,000 library. The architect when chosen will act as the agent of the City and will direct the expenditure of that million dollars. "How shall we pick him?" You might think that his past record in spending money for municipalities might be part of the basis for selection—but no! Listen to the Chairman as he continues. "I'll tell you. We'll ask him to make a sketch. We'll ask each local architect to make a sketch, and the best sketch wins!"

That is the old-fashioned idea, so they go at it; but as each architect is determined that *his* shall be the winning sketch, he won't trust his own draftsmen to make it. There is, however, a genius in the city who is in a class by himself. He makes a business of making sketches for architects. "I'll ask Alphonse to make it." So each architect, unknown to any of his competitors, secretly asks Alphonse to come to his office and commissions him to draw a sketch. Alphonse runs his fingers through his long black hair, keeps his own counsel and answers "O.K." Alphonse makes the sketches and delivers them to his six customers who thereupon take them, each in his own important way, to the Committee. The sketches are hung. They are scrutinized. In one of them Alphonse has been bold. The clouds are brilliantly luminous. That great elm tree is a masterpiece. "Gentlemen, *I* choose this one." "All right Mr. Chairman I'm with you." This is the one Alphonse did for Mr. Smith, so on that basis Mr. Smith is entrusted with the expenditure of a million dollars of the taxpayers' money. Such at least has been the general method adopted in the past.

It accomplishes just *one* thing. It selects an architect. To be sure, with all its expenditure of time and money, it selects with no more intelligence than drawing the name out of a hat. It is strange—or it is *not* strange—that business men should like to fool themselves this way? It is simple enough to choose more wisely, for an architect's ability is so easy to check up on. His successes and his failures, too, stand four-square for all to see. Think how different from the other professional men, —the doctor, for instance, whose successes might have been successes without him (no one knows) and whose failures his friend the undertaker has safely hidden forever. The architect has no such friend to hide his horrors. So, Mr. Chairman, you could have taken your Committee to any one of a dozen of his buildings, and have looked them over from roof to cellar, and have asked the janitor for the truth—the unvarnished janitorial truth—about the little things that go wrong; and, Mr. Chairman, you could have talked with other chairmen of previous buildings, and have learned whether the architect was easy to work with, honorable in his dealings, and careful in his management of the money entrusted to his control. For, Mr. Chairman, the architect may hire an artist to make his pictures, but his business responsibilities must be borne on his own shoulders. It is the part of discretion to choose a man who can not only draw but supervise and *deliver to you* in the end the building which you desire.

In addition to the point of view ex-

(Continued on page 72)

ANOTHER Koh-i-noor PRODUCT

DESCRIBED BY A. L. GUPTILL

THE KOH-I-NOOR POLYCOLOR CRAYONS (No. 1600)



64 SUNFAST COLORS

THERE ARE colored crayons and colored crayons, but here is a make of highest quality, adaptable to the most exacting demands of either novice or adept • Designers, artists, architects, etc., find them well-nigh indispensable • They can be used for work in fine or broad line or in mass shading • Used with a solvent such as gasoline, they produce wash effects • They come in single colors or in several selected assortments • The colors blend harmoniously •

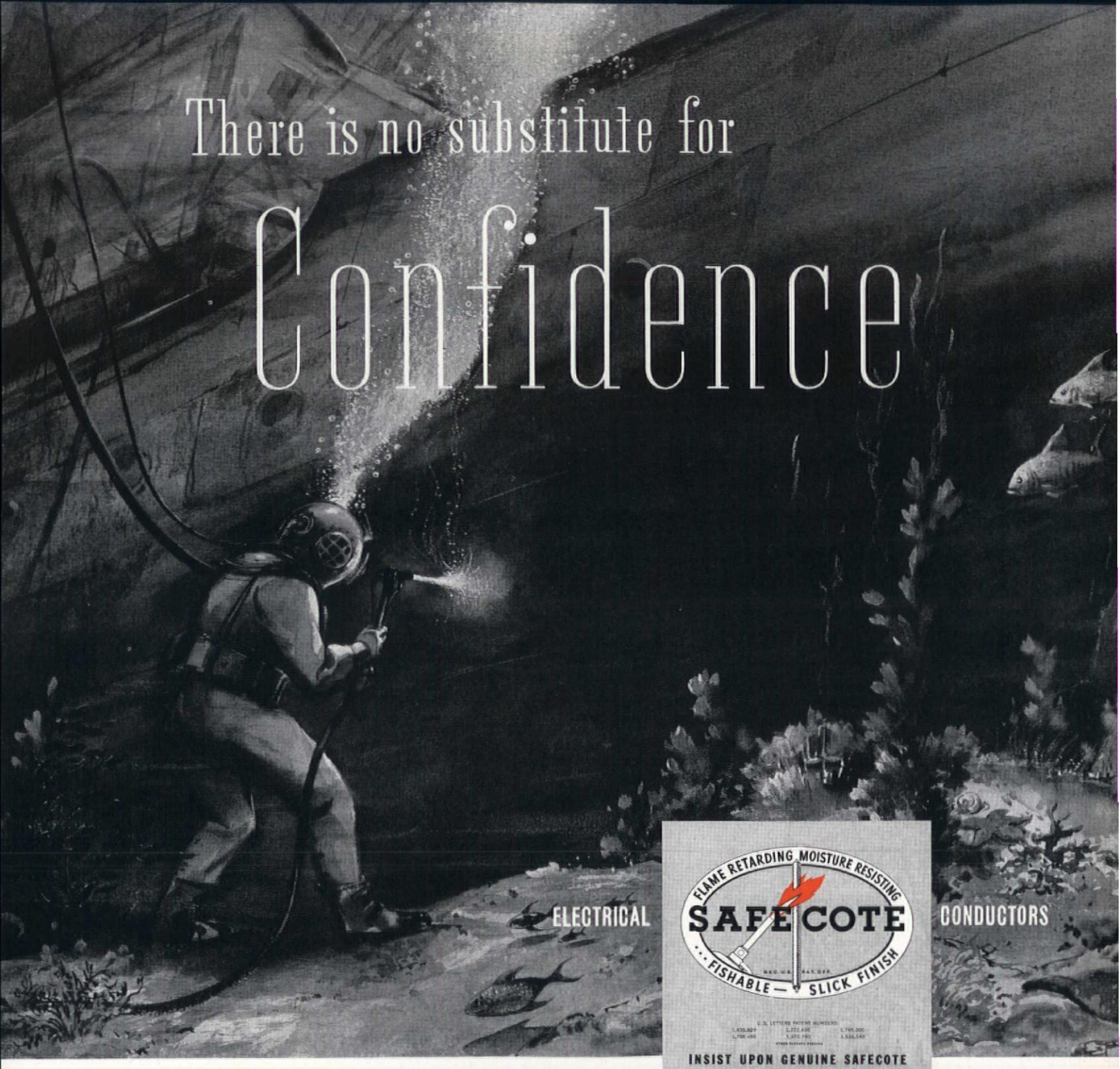
COLOR CHART SENT ON REQUEST



AN APPLICATION

KOH-I-NOOR PENCIL CO., INC.

• 373 FOURTH AVE • NEW YORK • N • Y •



No amount of Advertising... no amount of Salesmanship... will gain you a single customer unless that customer has confidence in you and in the goods you sell

THERE IS NO SUBSTITUTE FOR SAFECOTE

Built and tested to Safecote standards by these leading wire manufacturers

American Steel & Wire Company
Anaconda Wire & Cable Company
The M. B. Austin Company
Bishop Wire & Cable Corporation
Clifton Conduit Company
Collyer Insulated Wire Company
Crescent Insulated Wire & Cable Co.
General Cable Corporation
General Electric Company
Habirshaw Cable & Wire Corporation
Hazard Insulated Wire Works Div. Okonite Co.
National Electric Products Corporation
Paranite Wire & Cable Company
Providence Insulated Wire Company
John A. Roebling's Sons Company
Simplex Wire & Cable Company
Triangle Conduit & Cable Co., Inc.
United States Rubber Products, Inc.

SAFECOTE PERFORMANCE SPECIFICATIONS AVAILABLE UPON REQUEST • SAFECOTE LABORATORIES ARE AT YOUR DISPOSAL

GEORGE C. RICHARDS, LICENSOR'S AGENT • 155 EAST 44th STREET, NEW YORK CITY

LETTERS

(Continued from page 70)

pressed in this story, is the consideration of the judging authority.

The jury may be made up of men not nearly so competent as the competing architects. It is like the high school professor judging Einstein's calculations. Our impression of many competitions is that even the best available judges are influenced by manner of presentation, and that rarely do any judges spend time to familiarize themselves with the limiting conditions of the program, and that consequently the award is given to a design which violates the terms of the competition. It takes more time than a judge is willing to give to become adequately conversant with the program, and to check the plans against it, and if this is not done it puts a premium on violations, and creates demoralization in the profession.

In other words, a competition is justified only when the building is of sufficient importance to command the sustained interest and pay for the extended time of competent judges. This is rarely possible.

W. R. GREELEY

Kilham, Hopkins & Greeley
Boston, Mass.

English Offer

Forum:

I am very interested in contemporary American architecture and more in particular with mural and interior decoration. I wish to congratulate you on the splendid design and layout of your magazine, ARCHITECTURAL FORUM. As I write I have before me the designs in the competition for the Oregon State Capitol.

I should like to know if possible what scope there is for mural and interior decoration in America, and I would like an architect to give me an interior for which a color scheme and decorative motif is required. The sort of thing I have in mind is such as the decorative panels in the doorway of the Colorado Springs Fine Arts Center. I have recently completed studies for the Edwin Austin Abbey Memorial Scholarship to Rome. Apart from this, however, I have designed several schemes for public buildings . . .

CECIL EARNSHAW, B. E. C.

Gloucestershire, Eng.

Advertising the Architect (continued)

Forum:

After listening to two political conventions and a large number of the succeeding campaign speeches via the radio, I have come to the conclusion that what this country needs is more burnt-out radio tubes. However, in the intervals between country-savings it is still possible to hear a wide variety of programs.

What do you hear when you turn on your radio? I know what I hear. It is generally my fate to hear the Adventures of Buck Rogers in the Twenty-fifth Century. Mr. Rogers could do me a real favor by postponing his adventures until the Twenty-fifth century actually arrives, at which time I shall doubtless be engaged in tearing some pretty slick swing music out of a harp and will have no time to fret over whether Buck and Wilma get their de-energizing rocket working. Personally I am sufficiently de-energized already, without using a rocket. If I were any more de-energized than I am right now I would be practically paralyzed.

But regardless of what you hear on the radio, there is one thing that you do *not* hear. You do not hear any programs plugging the architectural profession. Almost alone of all the professions we are without benefit of crooners. Even the American Medical Association has capitulated and now fills the air waves with good sound reasons why you should drop in at some medical service station and let the boys see if your chassis is developing any squeaks. But no rich, resonant voice comes out of the loud-speaker urging 20,000,000 listeners to See Your Architect Twice a Year.

Why should this be true? The only reason I can think of is that the profession has been waiting for some sensitive artist to write a brilliant, thoughtful script for such a radio presentation; one replete with profound wisdom, extraordinary persuasiveness and running 29 minutes and 30 seconds Bulova watch time.

(Continued on page 74)



Agreed

MEDUSA-LITE

MAKES BEAUTIFUL WALLS AT LOWER COSTS

Beautiful because Medusa-Lite can be used on almost any surface in seven colors and white. It does not powder, peel or crack and is unaffected by acid, fumes and chemicals. One coat has remarkable hiding power. White has 90% reflective value and does not turn yellow.

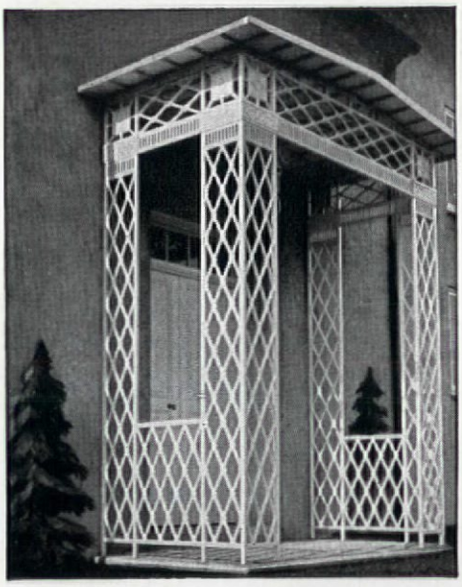
Economical because one coat usually covers—can be sprayed or brushed—works fast and can be used over other paints, fresh plaster or concrete—touching up can be done immediately—dries in 30 to 40 minutes.



•Write today for descriptive literature on Medusa-Lite, the super flat wall finish.

MEDUSA • • • • PRODUCTS CO.

Division of Medusa Portland Cement Company
1000 Midland Building • Cleveland, Ohio



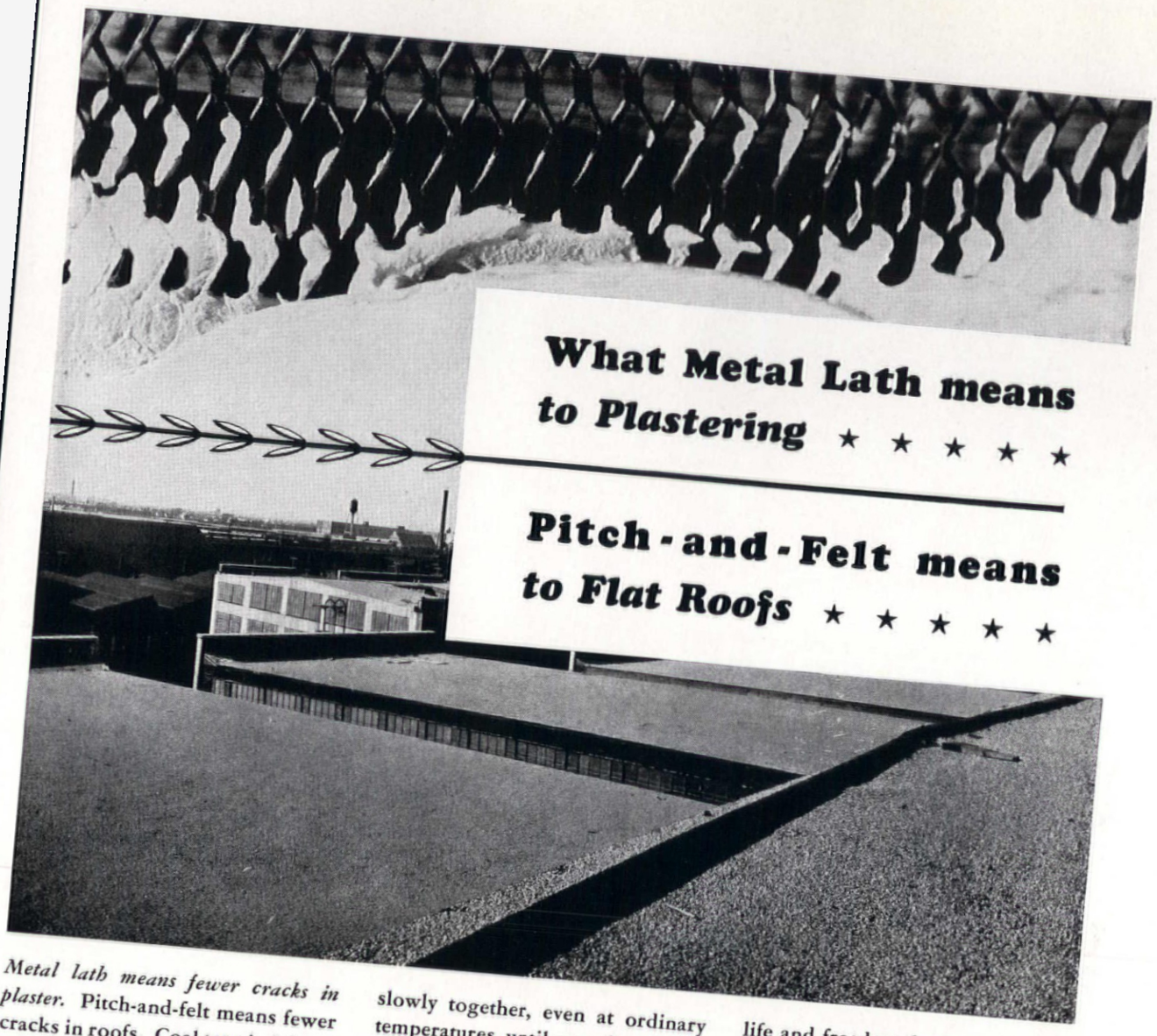
Cast Iron Veranda Design by Willing, Sims, and Talbut, Architects, Philadelphia.

CAST IRON VERANDAS by SMYSER-ROYER

Your inquiries are invited. Estimates, prices, or a complete catalogue of designs will gladly be furnished on request.

SMYSER-ROYER COMPANY

Main Office and Works, York, Pa.
Philadelphia Office, Architect's Building, 17th and Sansom Sts.



What Metal Lath means to Plastering ★ ★ ★ ★ ★

Pitch-and-Felt means to Flat Roofs ★ ★ ★ ★ ★

Metal lath means fewer cracks in plaster. Pitch-and-felt means fewer cracks in roofs. Coal tar pitch has a pliability and ductility which enables it to withstand, to an unusually high degree, vibrations and movements of roof decks which might cause cracks. But, if cracks do occur, the coal tar pitch has a property known as "cold flow" which makes the sides of the cracks move slowly together, even at ordinary temperatures, until complete fusion takes place and the layer of pitch becomes continuous again.

Metal lath means a firmly bonded wall. A pitch-and-felt roof (with slag or gravel top surface) means a firmly anchored roof.

★ ★ ★

Roofs of pitch-and-felt mean long life and freedom from trouble. 20 years of service is not unusual for a pitch-and-felt roof; many pitch-and-felt roofs have lasted 30, 40 and even 50 years.

For your client's protection, specify Koppers Coal Tar Pitch and Tar-Saturated Felt on all flat roofs.

Complete specifications for all Koppers roofs are in Sweet's.

KOPPERS

KOPPERS COAL TAR PITCH
KOPPERS TAR-SATURATED FELT
KOPPERS TAR-SATURATED FABRIC

KOPPERS PRODUCTS COMPANY
KOPPERS BUILDING PITTSBURGH, PA.

OTHER KOPPERS PRODUCTS: Koppers Creosote . . . Koppers Waterproofing and Dampproofing . . . Tar Base Paints . . . Tarmac for Roads, Streets, etc.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

KOPPERS PRODUCTS COMPANY
Pittsburgh, Pa.

Please send me: AF-6

Roofing Specification Book . . . ☐
Don Graf Data Sheets . . . . . ☐
Waterproofing Information . . . ☐

Your Name .....

Firm .....

Address .....

LETTERS

(Continued from page 72)

So I wrote one.

The program opens with the vested choir of the Second M. E. Church singing:

"Don't bungle over your bungalow
'Till your dream of a home is wrecked
For a plan send no buck to old Sears-
Roebuck—
Consult your architect!"

Then the voice of Graham McNamee: "I wonder how many of you know how to pronounce the word 'architect.' It is pronounced ARK-itect. Think of Noah when you think of an architect. Do not think of Jonah, however."

Then follows seventeen minutes of music by electrical transcription; not that anyone wishes to hear any music by electrical transcription, but it cuts the cost down. In between selections Mr. McNamee announces breathlessly, "They're up! They're down! Wait until later in the program to hear the details of the Grand Prize offer. You may be the one to win $1,000 a year for life."

The prize offer is really the whole secret. What is a radio program without a prize offer? As far as that goes, what is a radio program WITH a prize offer?

Finally, Mr. McNamee announces, "And now for the details of our Great Prize Offer. The First Prize is an annuity of $1,000 a year for life. The Second Prize is an annuity of $500 a year for life. All you have to do is this: tear the top off your house, write your name and address on it and mail to the station to which you are listening, together with a fifty-word letter on 'Why I should consult an architect at the first sign of spring'."

This is probably the brightest idea for a prize offer in the history of the radio industry. I amaze myself, sometimes. You see what will happen, don't you? Millions of people will tear the roofs off their houses, write their names on them and mail them in. What happens then? Well, the first time it rains the water comes right down into the dining room in such torrents that father can't tell if he's eating bombes glacee or asparagus soup. Irritated by this, he says to the little woman, "Nuts to this house. We either gotta get a new roof or a new house. Let's get a new house as I am sick of the people next door anyway."

What is the result? More than 1,000,000 new houses are built within six months after the program goes on the air; prosperity returns; Braddock beats Schmeling and the band plays Dixie.

Ah, but you say, the expense! What expense? All you have to do is to be careful to award the first prize to someone 96 years old and the second prize to an employe of a powder mill who has never been able to break himself of the habit of smoking cigarettes while at work. The cost would be negligible.

Of course, the fellow who wrote this script ought to get something. Thirty seconds start, perhaps.

Grand Rapids, Mich. ROGER ALLEN

Stationary Assessments

Forum:

After reading the article under heading "Remodeling Exemption" on page 3 of the July issue of ARCHITECTURAL FORUM, I am sending you portions of a letter I wrote to the Hon. Charles Stanton, Mayor of the city of Rochester, N. Y., under date of August 27, 1935.

"I propose that the City Administration, having first acquired the necessary authority, agree with a property owner that his assessment shall be kept at its present level for ten years, on condition that he proceed to improve the property by substantial building operations.

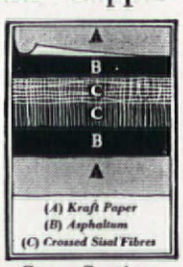
"I see no disadvantage to the City and no injustice to anyone in this proposal. The benefits which would accrue are:

1. Immediate release of money for building purposes.
2. Increased employment in the building trades and labor generally.
3. Better security to the City for the taxes which it is now levying on the property involved.
4. Substantial increase in tax income from the particular property involved, after the expiration of the ten years.

Rochester, N. Y. F. A. BROTSCH, JR.

These Sheets Are For You!

IN response to requests from several hundred architects we have just published a helpful group of AIA FILE SHEETS giving the Architect's Recommended Specifications for the use of Plain, Treated and Copper-Armored SISALKRAFT under the many conditions to which it is so admirably suited.



Cross-Section

Briefly these specifications cover: 1. The Protection of Sheathing. 2. Protection of Insulation. 3. Copper-Armored for Membrane Waterproofing, Window and Door Flashing. 4. Making Floors Water and Air Proof. 5. Roof Sheathing. 6. Concrete Curing. 7. Termite Barriers. 8-9. Practical Suggestions.

To secure this set of standard size file sheets, you have but to tell us you want them. We will also mail testing samples and answer your questions.

The SISALKRAFT Co.

205 West Wacker Drive, Chicago, Illinois
New York San Francisco

Want to eliminate the danger of scalding in your shower baths and stop unexpected changes in the water temperature?



● No more slipping in a soapy tub or on a wet tile floor while trying to dodge a "shot" of icy cold or scalding water—When you use a shower bath regulated by a Powers safety shower mixer the temperature remains right where you want it. You can really enjoy the thrill of a comfortable shower in absolute safety.

Why they're more economical—There's no loss of time or waste of hot or cold water while waiting for a shower at the right temperature — Powers mixers cost more —They're worth more.

Write for circular describing this remarkable shower mixer. The Powers Regulator Company, 2735 Greenview Avenue, Chicago. Offices in 45 Cities — see your phone directory.



POWERS SAFETY SHOWER MIXERS



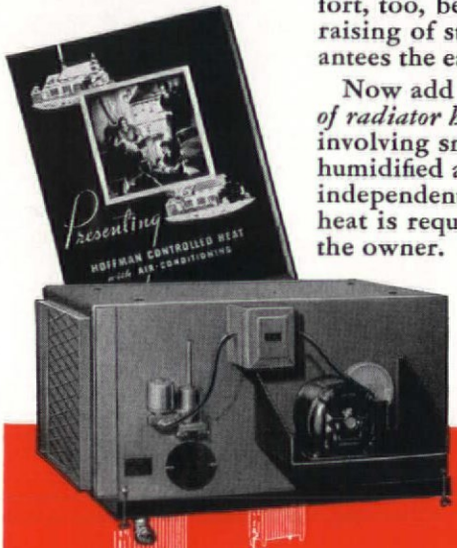
NOW HOFFMAN COMBINES THE BENEFITS OF VACUUMIZING AND 6-SPEED VENTING *with*

Air-Conditioning

Now homes heated with simple one-pipe steam systems can enjoy, at little expense, the ultra-refinements of modern heating and air conditioning! For the builder or modernizer who must watch his dollars, a Hoffman Air Conditioned One-Pipe Vacuum System offers value entirely out of proportion to its cost.

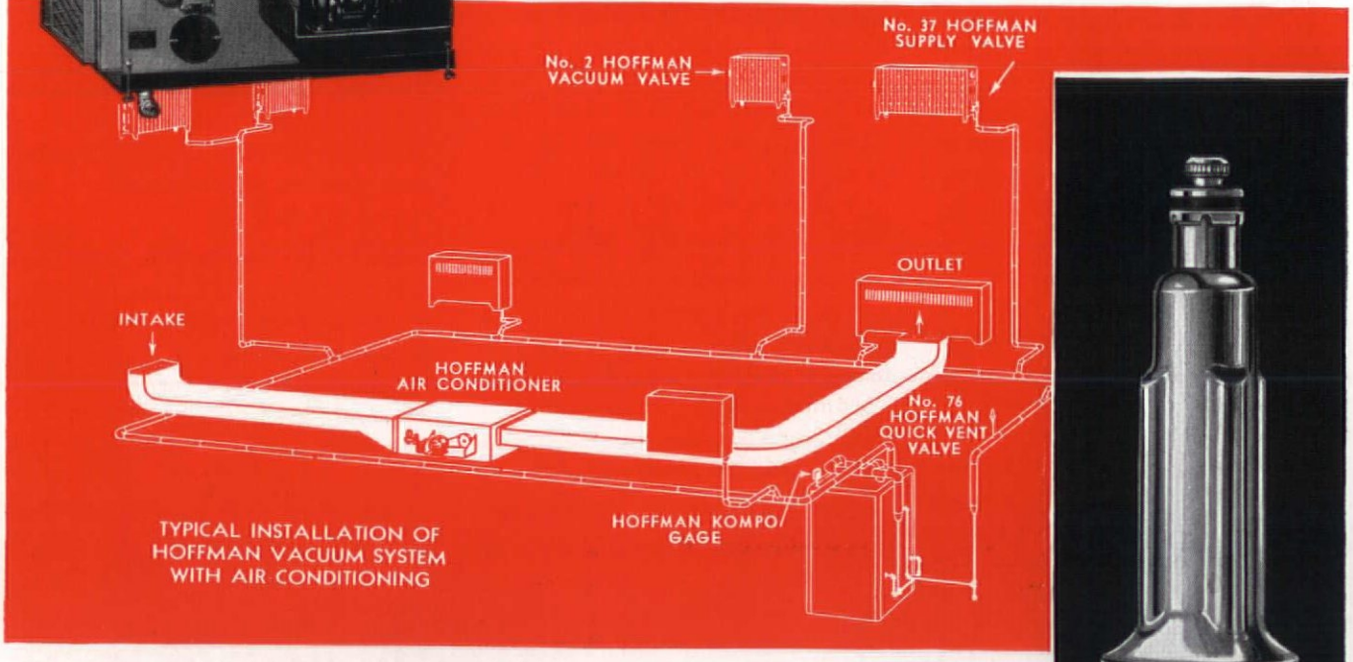
Economy is assured by the fuel saving ability of Hoffman Vacuum Valves. Extra comfort, too, because a vacuumized system heats quicker and stays hot without frequent raising of steam pressure. And the 6-Speed Venting feature of Hoffman Valves guarantees the easy "balancing" which means uniform heating in every room.

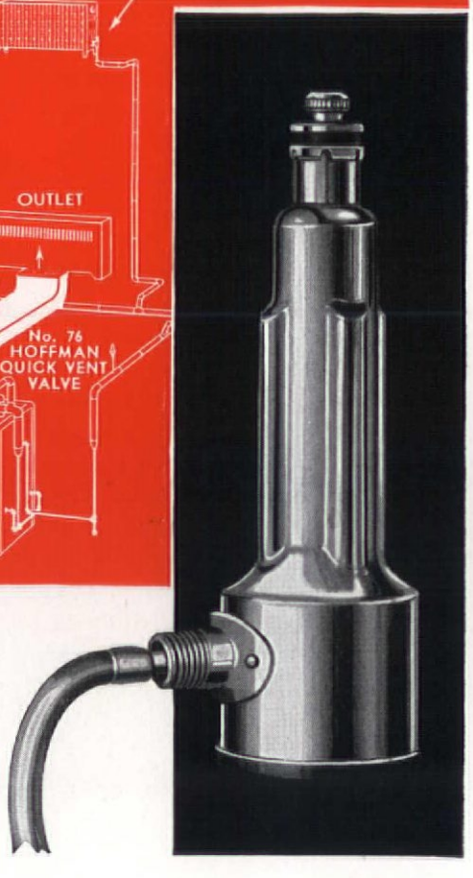
Now add the Hoffman Air Conditioner—*designed especially to meet the requirements of radiator heated systems.* This simple unit is installed with a minimum of duct work, involving small remodeling expense in old homes. It provides the fresh air, cleansed, humidified and circulated, now considered so vital to comfortable living. It operates independently of the heating system; hence, delivers pure, refreshed air whether or not heat is required. Here is a complete system you can sell with assured satisfaction to the owner.



SEND FOR THIS BOOK ON AIR-CONDITIONING WITH RADIATOR HEAT

Here is a complete presentation of the superiorities of radiator heat as the basis for air conditioning in the home. You will find it a valuable aid in designing either modernized or new installations. Free on request to the Hoffman Specialty Company, Inc., Dept. AF-9, Waterbury, Connecticut.





HOFFMAN

AIR-CONDITIONED RADIATOR HEATING SYSTEMS

Sold everywhere by leading wholesalers of Heating and Plumbing equipment



But "little man's folly"....

You know "Fessenden's Folly." Almost every sizable town or city has at least one such gargantuan eyesore—a huge, hideous house which proclaims an owner with much money, little taste.

These occasional giants of vulgarity are the mistakes of people who can afford mistakes. Less spectacular are the thousands of smaller mistakes made in little houses—but they are made by people who have to live with their errors the rest of their lives. Big man's follies are laughable—little man's follies are tragic.



Thousands of small houses go wrong because the owners, trying to save, decide they can get along without an architect. Perhaps they rely on ready-made plans "that just need a little shifting around." Perhaps they think they can rough out what they have in mind themselves. And when the house is finally built, all too often it looks "queer," different from the thing they had hoped for, planned for, dreamed of.

The architect can prevent such disappointment. He is expert at translating vaguely described human wishes into actual rooms and desired effects. He knows precisely what will work out well and what cannot hope to. He knows how to turn out a house that exactly fits your requirements, that fits your needs and wishes, custom-made to the measure of your desires. Indeed, whether the house be costly or inexpensive, an architect is a "must" for satisfying building.

And his usefulness extends far beyond this preliminary role of combined mind-reader, father-confessor and fairy-godmother to your hidden wishes. An architect is your ally long past the blue-print stage—right up to moving day.

He is the one man of the dozens involved in the long, intricate business of building who will watch over every operation, plan to prevent trouble spots, check unseen details.

The architect is a specialist in materials, construction methods, the technical problems of plumbing, heating, insulation, drainage. He represents your interests in comparing estimates of competing firms. Sometimes he can actually save you enough on building costs to pay his own fee.

For most people the great human experience of building a house is a once-in-a-lifetime event. It's penny-wisdom to get along without an architect in this vital undertaking—for in his brains, skill and experience lies your safest insurance.



THE ARCHITECTURAL FORUM

Published by TIME Inc., 135 East 42nd Street, New York City

THIS ADVERTISEMENT IS ONE OF A SERIES BY THE ARCHITECTURAL FORUM IN THE INTEREST OF BETTER BUILDING

THE ARCHITECTURAL FORUM

ANNOUNCES FOR OCTOBER

"Skyline of 1936"

A Reference Number on Current Building Trends

HERE in one big issue of The FORUM is a reference manual of practical data on important new developments in Plan, Design, Construction, Materials and Equipment for every type of building—six large plate and text portfolios each devoted to a basic building type and apportioned in size according to 1936 dollar volume:

RESIDENTIAL
- Single-family Residences
- Apartments
- Hotels

PUBLIC
- Government Buildings
- Utilities

INDUSTRIAL
- Factories
- Warehouses
- Workshops

COMMERCIAL
- Shops and Stores
- Restaurants
- Garages and Gas Stations

AMUSEMENT
- Theaters
- Recreational Buildings

INSTITUTIONAL
- Schools and Colleges
- Libraries and Museums
- Churches and Hospitals

EACH portfolio surveys general conditions, notes significant trends, presents case studies of outstanding new buildings with Interior-Exterior Photographs, Floor Plans, Critical Notes, Total Cubage, Cost Data, Construction Outlines. Each portfolio also contains a section on Miscellany—close-up studies of all kinds of pertinent detail selected because of its intrinsic merit.

IN addition to the six portfolios, "Skyline of 1936" includes a statistical section devoted to the story of building's last 12 months . . . a section on the men who made the building year . . . 10 case studies of the year's outstanding subdivisions . . . a detailed survey of new products and techniques.

THE entire issue has been carefully organized and thoroughly cross-referenced for practical, every-day use. "Skyline of 1936" will do for the broad field of today's building activity what The FORUM'S Small House Reference Numbers did for the small house.

POSTAGE WILL BE PAID BY TIME INC.

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 361, SEC. 510 P. L. & R., NEW YORK, N. Y.

The attached card needs no stamp. To enter a new subscription or renew an old one, fill out the reverse side of the card and mail it today.

THE ARCHITECTURAL FORUM

135 EAST 42nd STREET

TIME Inc. **NEW YORK, N. Y.**

SEND THE ARCHITECTURAL FORUM

FOR ONE YEAR (12 ISSUES) AND BILL ME FOR $4.

START with SEPTEMBER ☐ OCTOBER ☐

Name_____

Street_____

City_____ **State**_____

Please check here ☐ if this is a renewal subscription

Let's GLORIFY the American Home

THERE'S BIG PROFIT IN IT!

★ What do you do when you install a new and thoroughly modern General Electric itchen? You *glorify* an American home.

What do you do when you replace an old-fashioned eating system with a modern one? You *glorify* an merican home.

And now comes the Nu-Bidet to *glorify* the bathroom. s necessary as your tooth brush or the bathroom itself r downright cleanliness and personal hygiene, the u-Bidet is the greatest advancement in bathroom ac- ssories in the past twenty-five years. It is ultra-modern d "New American" from start to finish.

And from a home modernization standpoint, here is hat the Nu-Bidet has done and will do. One plumber t a job for $785, because when he sold a Nu-Bidet it ade everything else in the bathroom look terribly out date and so the whole room was modernized. Still nother sold 10 Nu-Bidets in two days and, of course, ll get plenty of modernization work from those sales.

Builders and developers are using the Nu-Bidet as an tra-modern drawing card in the sale of new houses.

You, too, can make big profits not alone in the sale of e Nu-Bidet but in modernization jobs that are the rect result of the sale of a Nu-Bidet because it gets ur prospect in a buying mood, that's important.

Let's *Glorify* the American Home. The Nu-Bidet will lp do it. There's Big Profit in it.

WHAT IS THIS NU-BIDET? READ THIS!

The Nu-Bidet is a thoroughly modernized Sitz Bath... and more. The following uses make it a safeguard to health and as necessary to personal hygiene as your tooth brush or the bathroom itself.

Sitz Bath for personal hygiene and treatment of rectal disorders. Spray for same purpose and feminine hygiene. Attachment for douche, enema and hydrotherapeutics, entirely eliminating the old rubber bag method.

The Nu-Bidet can be installed on any standard size toilet bowl in less than two hours. It will convert the ordinary bathroom into one that is truly hygienic at a small investment. Use coupon now.



e Nu-Bidet lifts up and stands ainst the lid when not in use.



The Nu-Bidet looks like the average toilet. No extra space required.



The Nu-Bidet is a complete unit of seat, Nu-Bidet and lid in one assembly, which replaces the regular seat and lid. *It is equipped with a specially designed and patented vacuum breaker and also a specially designed siphon breaker, making back siphonage or a cross connection impossible.*

The Nu-Bidet (BEE-DAY)

ENSAN CORPORATION • 341 Park Avenue • New York

KLEENSAN CORP., 341 Park Avenue, New York, N. Y. F-9

Please send brochure, "Your Answer to a Long-Felt Need."

Name_____

Address_____ City and State_____

Jobber_____

Address_____ City and State_____

Jobber ☐ Retail Plumber ☐ Consumer ☐ Architect ☐

The REVECON SYSTEM for

. . . DECORATIVE METALS, STRUCTURAL GLASS, CERAMICS,

Questions have flooded in about

Publicity regarding the new Revere REVECON SYSTEM for holding flat sheet materials has brought numerous inquiries from architects, builders and other factors interested in building construction. As a service to architects and others concerned, we publish herewith answers to questions most frequently asked about the Revecon System.

Question: What is the Revere Revecon System?

Answer: The Revere Revecon System is a method of using a framework of extruded aluminum alloy Revecon Sections to construct surfaces with any type of rigid sheet finishing material.

Question: What are some typical examples of decorative and structural sheet materials that can be applied advantageously by means of the Revecon System?

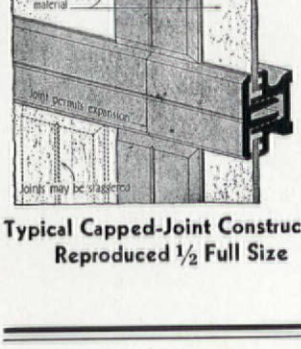
Answer: Any sheet material sufficiently rigid to support itself on edge, and of any standard thickness up to ½", may be used with the Revecon System. Typical are formed edge metal panels of porcelain-enameled steel or iron, aluminum, brass, bronze, copper, nickel silver, steel and other metals and alloys. Also plate, A-A, or structural glass, translucent marble, plastics, ceramics, asbestos-cement, wall and insulating boards, acoustical materials.

Question: What are the general outstanding features of the Revecon System?

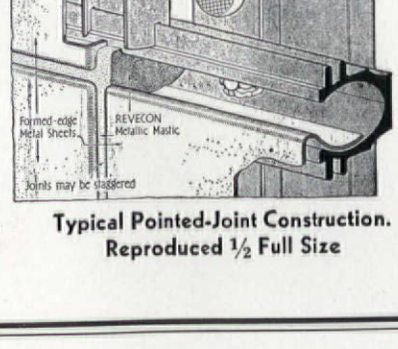
Answer: Sheet material of any or all thicknesses up to ½" may be accommodated in the same Revecon installation. Two basic designs—Capped-Joint and Pointed-Joint—are available, and may be combined in one installation as desired. These features allow unusual freedom in the design of decorative detail and in the use of size, color or texture. The entire finish is an integral structural unit with all elements interconnected, yet free to expand and contract in individual units without distortion.

Question: What are other advantages of the Revecon System?

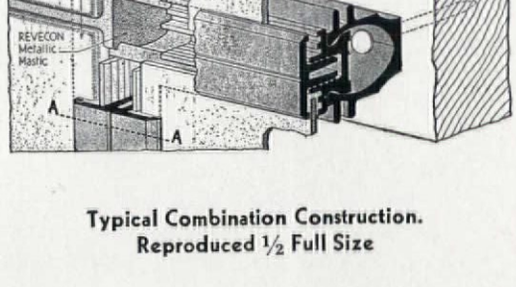
Answer: The Revecon System provides a light-weight, rigid finishing construction—waterproof and air-tight. Standard-sized, flat, decorative or structural sheet building materials are used. Pre-fabrication is required only in pointed-joint construction. Shallow depth required (only ⅜" for flat sheet materials, or 1" for formed-edge metal panels) makes the use of this system particularly adaptable to remodelling projects. Insulation of any type may be used. The installation can be readily erected without special tools or equipment. Structural members require no painting or other maintenance. Damaged panels may be readily replaced without disturbing adjacent panels. Alterations may be made with same Revecon members.



Typical Capped-Joint Construction. Reproduced ½ Full Size



Typical Pointed-Joint Construction. Reproduced ½ Full Size



Typical Combination Construction. Reproduced ½ Full Size

Revere Copper *and* Brass

MILLS: BALTIMORE, MD. • TAUNTON, MASS. • NEW BEDFORD, MASS. • ROME, N. Y.

Holding Flat Sheet Materials

PLASTICS, INSULATING AND WALL BOARDS, ETC.

this new system!

Question: What elements comprise Revecon construction?

Answer: a. Specified sheet materials such as are listed after Question #2.

b. Revecon members, consisting of extruded aluminum alloy sections, combining strength, rigidity and minimum weight. Component shapes possess the straightness of line and precision of fit that characterize extruded shapes. Sections may be obtained alumilited in various colors on order.

c. Revecon Metallic Mastic, which seals the assembly against weather, and permits expansion and contraction within panel area. The composition of this mastic assures permanent plasticity and efficiency in performing these functions.

Question: What are some typical applications of the Revecon System to architectural and construction problems?

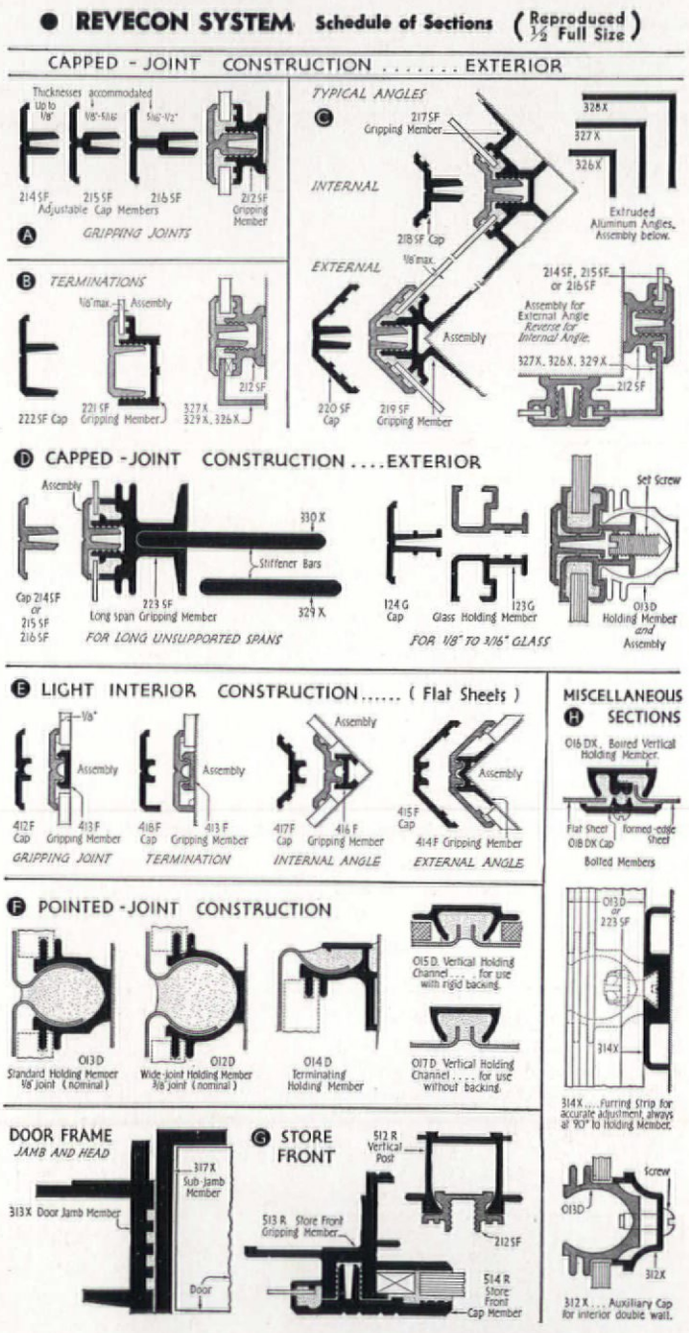
Answer: Facing and re-facing of exterior and interior walls of single and multi-story buildings, with decorative sheet materials. Store fronts—complete, or combined with other products. Garages and service stations, or any type of building with a light supporting framework. Partitions with single sheets, finished on both sides, or double-walled. Boiler and radiator casings, cabinets, signs and sign panels, spandrels, etc.

Question: Is erection simplified by using the Revecon System?

Answer: Yes. The complete installation can be made quickly and without special tools, other than a slotted screw driver for castle nuts, and a double-bladed hacksaw for notching and fitting Revecon members to the supporting area.

Question: How can I learn more about the Revecon System without obligating myself?

Answer: Write on your own letter-head to Revere Copper and Brass Incorporated, Dept. B, 230 Park Avenue, New York, N. Y., and ask for the Revere *Revecon Handbook.*

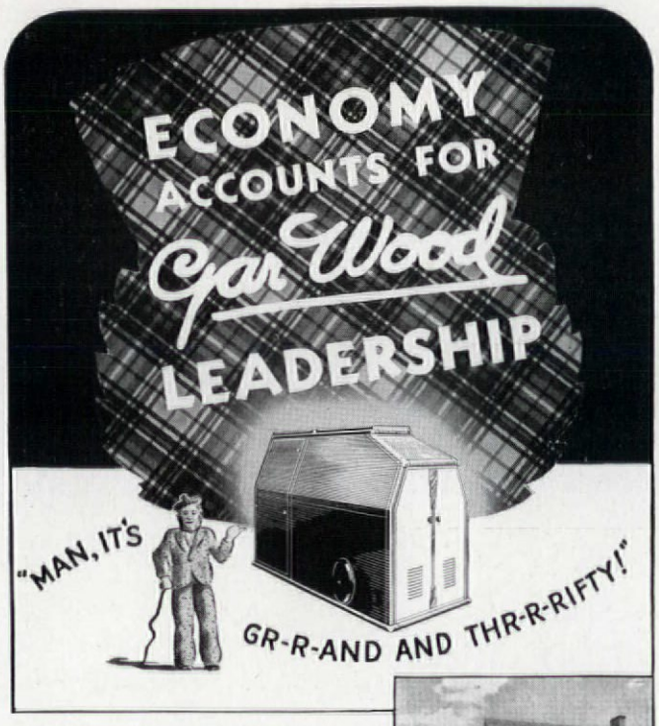


FOUNDED BY PAUL REVERE

1 8 0 1

Incorporated 230 PARK AVENUE, NEW YORK, N. Y.

DETROIT, MICH. • CHICAGO, ILL. • SALES OFFICES IN PRINCIPAL CITIES



OUTSTANDING fuel economy has placed Gar Wood in a unique position of leadership. Everywhere, owners say Gar Wood oil heat costs less than coal. This economy is available, not only for air conditioning and heating homes with warm air, steam or hot water, but also in a complete line of water heaters for domestic and commercial use.

For regions where gas is a logical fuel, there is now a gas-fired Tempered-Aire, which absorbs and uses the same high percentage of the heat generated as the oil-burning units do.

Write and we'll give you all the facts, including details of how we cooperate with architects and builders through our field engineering staff.

★



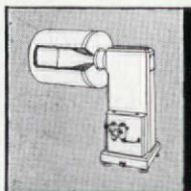
"From Nov. 15 to Mar. 15, the oil used was 1500 gal. Heat has been uniform and satisfactory."
R. B. Moody



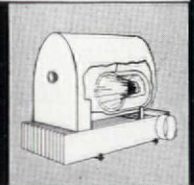
"We reduced our heating cost over coal and wood hand-firing approximately 35%."
Chas. P. Pinardi



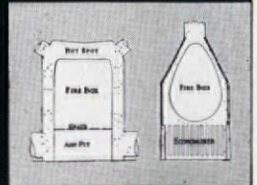
"Our heating cost for 7 large rooms for 5½ months was $78.20."
J. F. Feltmann



Burner and firebowl are coordinated; combustion is complete.



The large combustion chamber insures complete heat absorption.



The "Economizer" increases heating surface to 3 times that of a furnace of conventional design.

AIR CONDITIONING DIVISION
GAR WOOD INDUSTRIES, INC.
DETROIT ★ MICHIGAN



A Lifetime of Service Luxury and Charm

Nothing else adds such charm to the modern kitchen as an

ELKAY "Sturdibilt" Stainless Steel Sink

Age cannot dim its lustrous beauty and its silvery surface will retain its brilliance indefinitely assuring a Lifetime of Service.

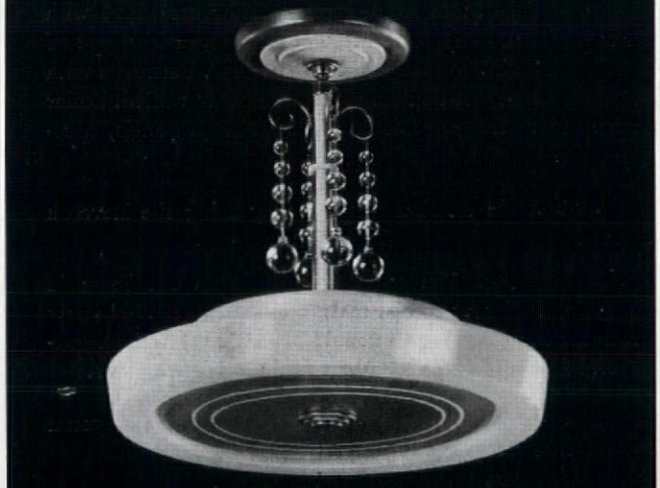
ELKAY "Sturdibilt" Sinks are "Custom Built" to meet any requirements, and are Guaranteed to fit RIGHT.

Our Engineers will gladly submit plans. Write today for Illustrated Catalog.

ELKAY STURDIBILT METAL PRODUCTS

ELKAY MFG. CO.
4723 Arthington Street, Chicago

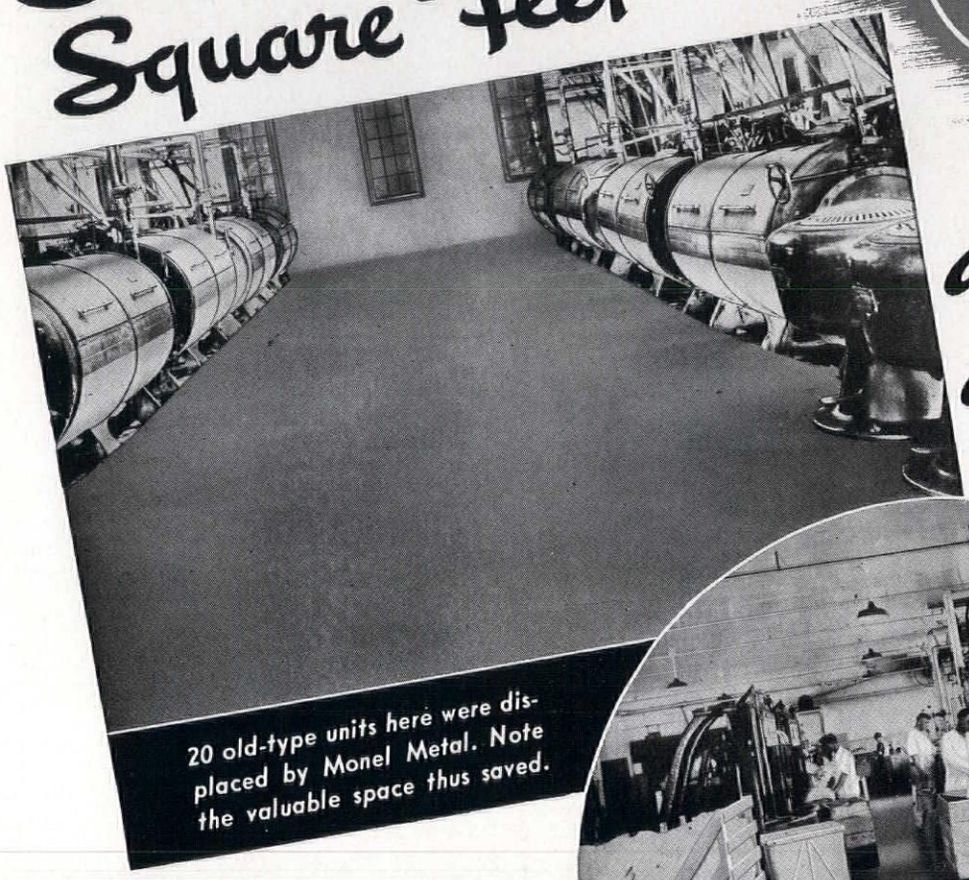
PLAN THE LIGHTING WHEN YOU'RE PLANNING



Original contours in the new Lightolier designs promote more interesting interiors as definitely as they provide greater lighting efficiency. Equipment of this type, formerly beyond the reach of the average home owner, is now available at exceptionally moderate prices through Lightolier or its distributors. Write for "The Charm of a Well-Lighted Home."

LIGHTOLIER
11 East 36th St., New York City
Chicago · Los Angeles · San Francisco

SAVE Square Feet and Round Dollars



20 old-type units here were displaced by Monel Metal. Note the valuable space thus saved.



10 modern units saved 25% in floor space, cut operating costs 42.8%.

There's an easy way to trim costs in institutional laundries...plan for

MONEL METAL

On any institutional job when the budget won't stretch, here's one place you can cut costs . . . and assure a positive *gain* in year after year operating efficiency:

There's no theory about the saving that Monel Metal laundry equipment assures. The installation shown here takes up 25% less floor space than the older equipment. The saving in operating costs, year after year, amounts to 42.8%.

Moreover, the Monel Metal-equipped laundry uses 10 machinery units, against the 20 old-type machines that were displaced, and needs 4 operatives instead of 7—to turn out the same amount of work.

There's no guesswork about this . . . it's actual history.

Moreover, Monel Metal is smooth; solid, rust-proof, resistant to corrosion, and so tough and strong that wear and depreciation almost reach the vanishing point.

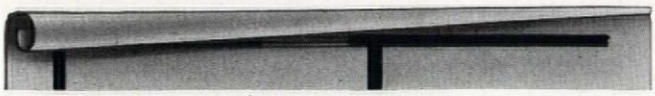
Monel Metal is available in washing machines, extractors, trucks, table tops, utensils, starch cookers and every part and piece of laundry equipment which is subject to rust, corrosion or wear.

Write for information regarding the planning and equipment of institutional laundries, and facts about Monel Metal laundry equipment. Address:

• • •

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

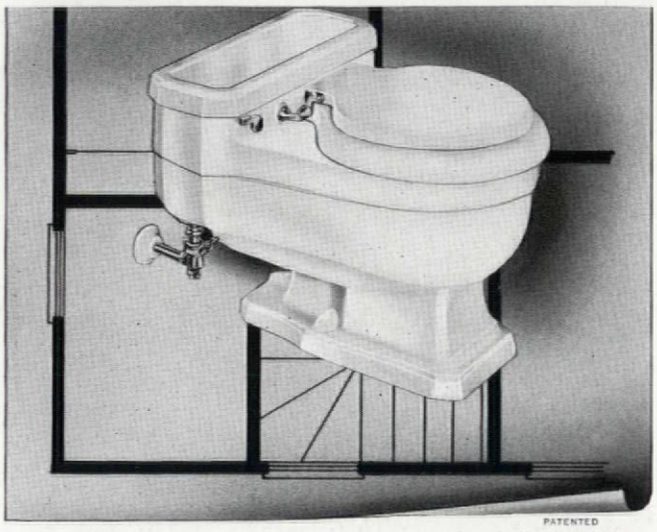
Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel



When you stop to figure

YOU'LL WANT TO INCLUDE THE

T/N *in your bathroom plans*



PATENTED
PATENTS PENDING

● When the figuring is done, an ever increasing number of bathroom specifications include the T/N one-piece water closet. With good reason, too, for client satisfaction is registered highest with the T/N . . . and hundreds of thousands of prospective home owners have been made familiar with T/N features through advertising in leading publications. Because the T/N needs no wall for attaching, and can be placed in a corner or even beneath a window, an infinite variety of bathroom layouts is possible. And the T/N design conforms to all modern bathroom fixture trends. Its strong but quiet flushing is an important advantage, along with the non-overflow feature, atmospherically vented to prevent water supply, contamination, and the great variety of available colors. Priced so you can include the T/N in the most modest home plans.

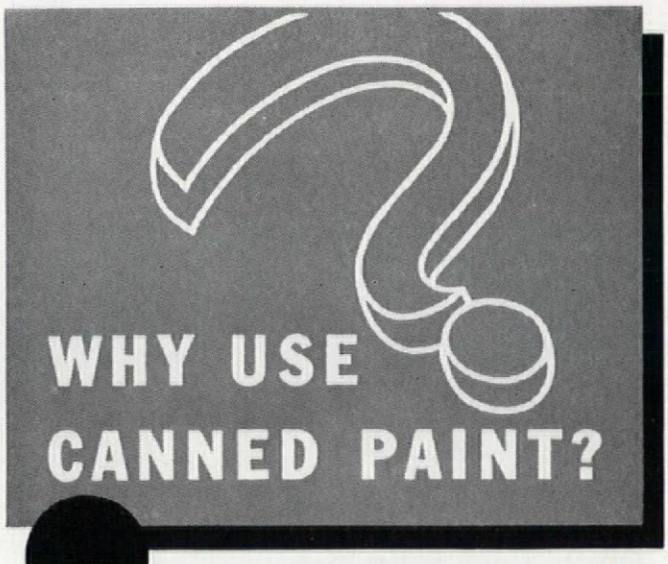
W. A. Case & Son Mfg. Co.

BUFFALO, N. Y.

FOR YOUR FILES...

Interesting material on the T/N is yours for the asking

W. A. CASE & SON MANUFACTURING CO.
33 Main St., Buffalo, N. Y., Dept. E-96
Please send for our files your material on the T/N one-piece water closet.



Every architect has heard painters exclaim, "No canned paint for me. I'll mix my own and get a finish that's 100% pure!"

That's *just* the kind of finish Berry Brothers makes! What's more Berry Paints eliminate the doubtful consequences of hand-mixing—banish wasted time and labor.

By all means, demand Berrycraft 100% Pure Paints. It is the one sure way of getting quality that is fixed and absolute!

BERRY BROTHERS

VARNISHES • ENAMELS • LACQUERS • PAINTS
DETROIT, MICH. • WALKERVILLE, ONT.

More per dollar AT THE DRAKE SAYS PITTSBURGH BUSINESS LEADER*

Mr. Benj. H. Marshall, Pres.,
The Drake Hotel,
Lake Shore Drive,
Chicago, Illinois.

Dear Mr. Marshall:

I am most happy to tell you that I found the surroundings at the Drake as fine as I have ever found them anywhere and that I received more per dollar than for a long time past.

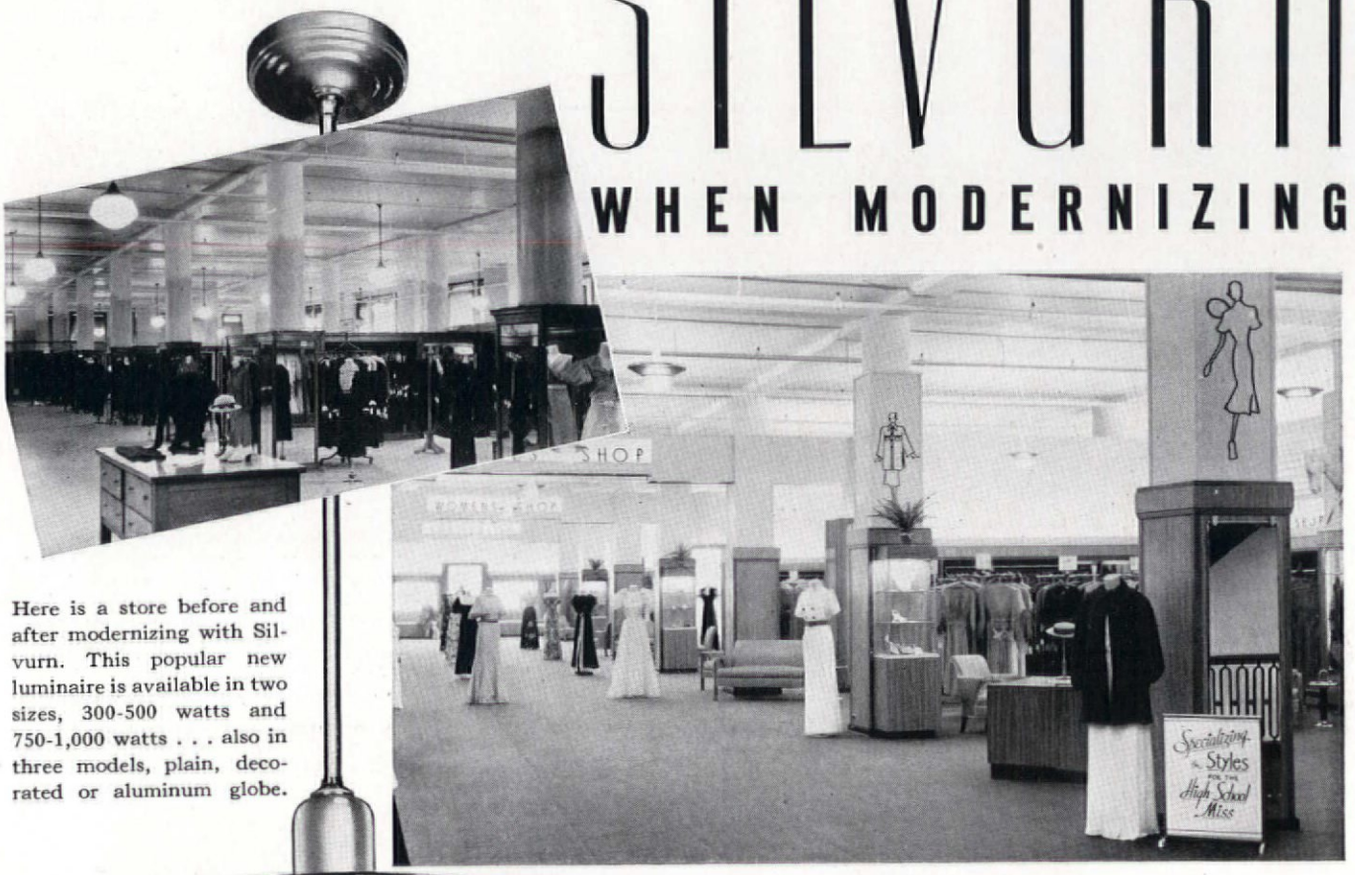
Best regards for your success. •

(Original Letter on File)

RATES BEGIN AT $3

The DRAKE HOTEL CHICAGO

Smart Stores Select SILVURN WHEN MODERNIZING



Here is a store before and after modernizing with Silvurn. This popular new luminaire is available in two sizes, 300-500 watts and 750-1,000 watts . . . also in three models, plain, decorated or aluminum globe.



● Light is playing an increasingly profitable part in modern store merchandising. Inviting store appearance, greater ease of seeing, less customer and clerk fatigue, reduced merchandise returns are *direct results* of carefully planned lighting modernization.

The new Westinghouse Silvurn Luminaire is especially recommended, for it is designed especially to meet modern store lighting requirements. In addition to its distinctive illumination, Silvurn offers many new construction features such as Alzak processing of the aluminum which decreases maintenance costs and gives more light for the money.

Why not get complete details about Silvurn styles *now*. See your Westinghouse Distributor, or write Westinghouse Electric & Mfg. Company, Lighting Division, Edgewater Park, Cleveland, O.

WHEN YOU THINK OF *Lighting* THINK OF

Westinghouse



WHEN THE JOB IS WELL DONE

● If the owner smiles his satisfaction . . . if the architect points with pride . . . if the builder feels the job is well done . . . you can be sure of finding CHURCH SANI-SEATS in the bathrooms. They are the finishing touch to good bathroom design.

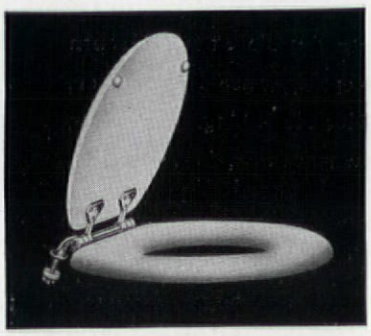
CHURCH SANI-SEATS are attractive and sanitary . . . moderately priced and remarkably easy to keep clean. Their wide range of attractive colors, with plain or pearl finish, places no limitation on the color scheme or decorative possibilities of your bathroom design.

Lasting Smoothness

The glistening ever-clean appearance of CHURCH *sheet covered* SEATS comes from its thick covering. It is not painted or varnished. It will not chip, crack or peel. Soap and water keep it sanitary.

For commercial and industrial jobs, CHURCH Sani-Black SEATS are recommended. Molded of hard rubber, they are impervious to acids, time or abuse. They outlast the building in which they are installed. Their first cost is the last.

There is a model of CHURCH SEAT to meet every need. Famous CHURCH quality and workmanship are present even in the lowest priced seats. Send today for catalogue showing complete line.



● CHURCH SHEET COVERED SEATS *in white and color will not crack, chip or peel.*

● CHURCH SANI-BLACK SEATS *outlast the building. Absolutely indestructible.*



C. F. CHURCH MFG. CO. • HOLYOKE, MASS.
Division of American Radiator & Standard Sanitary Corporation

CHURCH *Sani* SEATS

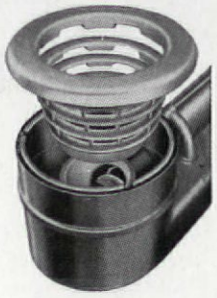


More and More Architects Specify

THE
AUTOMATIC BUTLER
COAL STOKER

●

because it's Flexibly Engineered for Finest Performance with the Bituminous Coals of Every Locality!



INTERCHANGEABLE TUYERES

Several combinations of interchangeable retort bodies and tuyeres provide necessary variation in air distribution to fit the particular burning qualities of coals in each section of the country.

ZONED AIR CONTROL SYSTEM

The Automatic Butler employs a highly-engineered and exclusive zoned and controlled system of high pressure air distribution through grate tuyeres over the entire firebed. This, combined with

THE *New* PULSATOR *gives World's Highest Efficiency - - Bar None!*

The Exclusive Butler gear-driven *Pulsator* combines ram and screw fuel feeding for larger installations, affording two-way agitation of the fuel mass to break up heavy coking formations and prevent blow holes. Write today for all details!

ASK YOUR SECRETARY TO WRITE FOR ARCHITECTS' MANUAL

BUTLER MANUFACTURING COMPANY
1248 EASTERN AVE., KANSAS CITY, MISSOURI

PROTECTION
with beauty and convenience



Think of the places you can use this attractive barricade! Built in any size or metal there's no limit. It coils above the lintel and is spring counterbalanced. Convenient as a window shade it's out of sight when open but impassable when closed . . . with added advantage of admitting air, light and vision. Let Kinnear Engineers tell you of a few places it is being used and work with you on jobs you have on the board. You know, Kinnear's organization is nation-wide. So it's easy to call us.

The Kinnear Mfg. Co.
1640-60 Fields Avenue Columbus, Ohio

BUILD YEAR 'ROUND COMFORT INTO HOMES . . . BUILDINGS

Give Owners the Economy Features of RED TOP INSULATING WOOL



■ For the architect Red Top Insulating Wool comes very close to being the perfect insulation. It combines tremendous efficiency with low cost . . . lets the architect get the results he knows are best at a price the client can pay. A four-inch thickness has eight to ten times the efficiency of typical half-inch insulations. And the cost installed is low, so low that Red Top soon pays for itself in fuel saved.

FIREPROOF PERMANENT. There is no other insulation quite like Red Top Wool. It is unique in its light weight . . . only eight ounces per square foot four inches thick . . . in its life, its resiliency and in its clean white appearance. Red Top stays in place to give long and efficient service. It is genuine wool, made of long staple fiber free from shot and other non-insulating impurities. It is fireproof, vermin proof, permanent.

A PRACTICAL INSULATION. Not a one purpose insulation, Red Top helps to solve many problems . . . insulation of the new home, reconditioning the old home, economical use of automatic heat, reduction of fuel costs in homes expensive to heat and always the achievement of comfort summer and winter.

U.S.

SPECIAL TYPES. Red Top is now made in new special types with special advantages. Red Top Strip Wool . . . nine-foot strips that fit snugly between studs, ceiling to floor. Each has a face of tough waterproof paper with a flanged edge for nailing to studs or rafters. Red Top Bat Wool also has the same waterproof paper face with flanged nailing edges.

COMPLETE SPECIFICATION DATA. Send for specification book pictured below. Bat Wool, Strip Wool, Junior Bat Wool, Nodulated and Granulated Wool are all described and a specification is provided for each. You will find this a handy manual and a practical reference source on insulating wool. Send for your copy today.

UNITED STATES GYPSUM COMPANY AF-9
300 West Adams Street, Chicago, Illinois
Please send me, free of charge, a copy of USG Red Top Insulating Wool Specification Book.

Name.....

Address.....

City..... State.....



UNITED STATES GYPSUM COMPANY

New, low-cost Program Sound System fits in on many projects



WESTERN ELECTRIC'S newest sound distributing equipment is ideal for schools, hospitals, hotels, stores. Whether you are planning a new building or modernizing an old one, you'll find this system "belongs."

Microphone, radio, record reproducer, amplifiers and keys for selecting loud speakers in as many as 60 locations are all combined in one compact, attractive unit. Quality of sound reproduction is high—first cost and operating cost are remarkably low.

There's an illustrated booklet giving full technical information and a summary of services which this system renders. Have your secretary write for it today, addressing Graybar Electric Co., Graybar Building, New York.

Western Electric
PROGRAM SOUND SYSTEMS
Distributed by GRAYBAR Electric Co.
In Canada: Northern Electric Co., Ltd.



BUILDING *for the Future*

Permanence in the construction of a home is the prime essential. Gimco Rock Wool House Insulation as a part of the home is as permanent as the rock from which it is made. Gimco Rock Wool is manufactured from stone by a patented process and is one of the finest mediums of insulation on the market today. This insulation is highly efficient in checking the transfer of heat through the side walls and ceiling of a home; it is fire resisting because it is made of stone and can not burn; and in most cases will outlast the home it insulates.

In selecting insulation, specify the one that, through long years of service, has proven itself to excel in every way. For your next building contract specify Gimco Rock Wool House Insulation.

Write today for complete information about Gimco Rock Wool, the insulation of superior merit.

GENERAL INSULATING & MFG. CO., Alexandria, Ind.
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS of ROCK WOOL PRODUCTS

ARCOLOY PAT. NO. 2,017,025

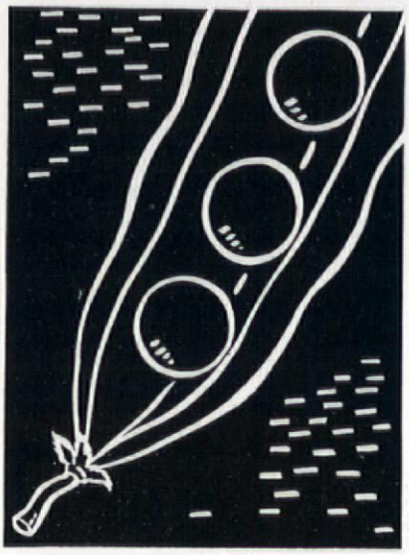
Arcoloy
Reg. Trade Mark

a new copper alloy, corrosion resisting

● American Radiator introduces Arcoloy, a new metal which can be welded, which combines corrosion and acid resisting qualities with the tensile strength of carbon steel, and is easy to fabricate. It comes in tubes, sheets, or ingots. Fits requirements of many commercial and industrial uses. For details write to Non-Ferrous Dept., American Radiator Company, 40 West 40th Street, New York, N. Y.

AS *Unlike*

AS PEAS IN A POD



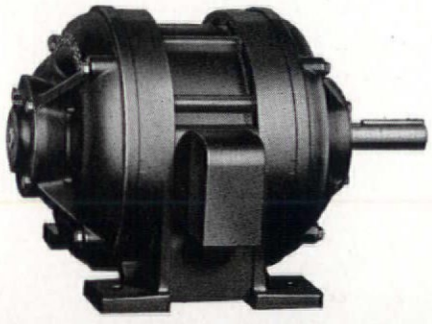
● Peas in a pod may look exactly alike . . . in color, in size, in shape . . . but naturalists know that these seemingly identical peas have huge inherent differences—one may engender a sturdy race, another a race of weaklings.

PEAS . . . and MOTORS! In both, the possibilities for inherent differences are great.

Motors can be built of light materials so that they will hold together and fulfill their electrical characteristics . . . but what about their mechanical durability?

Allis-Chalmers Motors excel because they were distinctly designed and developed for severe industrial duty. They were not developed through our electrical department alone, but through our electrical department working closely in conjunction with all the highly specialized knowledge and experience of all the various departments of the Allis-Chalmers Mfg. Co., builders of the most diversified line of machinery on the American continent.

The Allis-Chalmers Mfg. Co. builds standard motors of every type from 1 hp. up—also motors for special application



Allis-Chalmers Motors have been designed and built not only to deliver their electrical characteristics precisely, but to take a beating day after day and year after year and continue to deliver them faithfully. They are the sturdiest motors on the market—bar none.

Their great mechanical strength reduces maintenance costs to the minimum and extends their life beyond that of all less sturdily constructed motors, making them the most profitable motor buy on the market today.

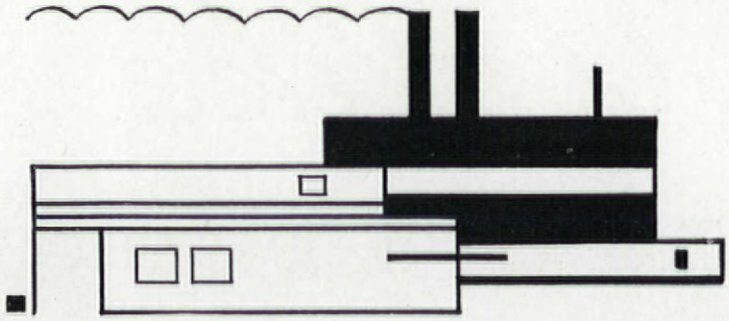
MOTOR DIVISION

ALLIS • CHALMERS

FOR EVERY PURPOSE

MILWAUKEE WISCONSIN

BUILDING UPSWING



Among the tangible evidences of an encouraging advance in building is TIME's advertising record. For the past three years TIME has established itself as a barometer of the confidence of manufacturers of building materials by leading all general magazines in the building classification. TIME's greatly increased building advertising to date in 1936, therefore, may be considered significant.

These advertisers of building materials and equipment are addressing TIME's active building market this year.

Acousti-Celotex
Air Conditioning Manufacturers' Ass'n and Kinetic Chemicals, Inc.
Airtemp Heat and Air Conditioning
Alexander Smith Broadloom Carpets
Allegheny Steels
American Radiator Conditioning Systems
Armstrong's Linoleum Floors
Auditorium Conditioning Corporation
Barrett Roofs
Belden Electrical Cords
Brown Instruments and Controls
Bryant Boilers & Air Conditioners
Cabot's Collopakes & Shingle Stains
Capitol Rock Wool Insulation
Carrier Air Conditioning
Cast Iron Pipe
Climax Mo-lyb-den-um
Crosley Shelvador
Cutler-Hammer Controls
Cyclone Fence
Delco-Frigidaire Conditioning
Dutch Boy White Lead
Electrolux Gas Refrigerator
Fairbanks-Morse
Frick Refrigeration and Air Conditioning
Friez · Baltimore Comfortrol
Frigidaire—Commercial Research Division
Fulton Sylphon Temperature Controls
General Electric Air Conditioning
General Electric Disposall
Glidden Paints & Varnishes
Hodgson Houses
Holland Furnace Co.—Heating & Air Conditioning
Ilg Ventilation and Air Conditioning
'Incor' 24-Hour Cement
Iron Fireman Automatic Coal Burner
Johns-Manville Insulation
Kelvinator Air Conditioning
Kelvinator De Luxe
Kleen-Aire
Kreolite Flooring
Minneapolis-Honeywell Automatic Controls
Monel Metal
Myers Water Systems
National Lead Co.
O'Brien T.T.O. Paint
Otis Elevators & Escalators
Owens-Illinois Glass Company (Insulux & Dust-Stop)
Page Fence
Permutit Water Conditioning Equipment
Pittsburgh Plate Glass Company—Paint and Glass
Pozzolith
Republic Steels
Revere Copper and Brass
Robbins & Myers Motors
Scovill Manufacturing Company
Sherwin-Williams Paints
Square D Company
Sturtevant Air Equipment
Sunbeam Air Conditioning
Truscon Standard Buildings
United States Steel
Webster Moderator System
Weisway Cabinet Showers
Western Pine Association
Westinghouse Electric & Mfg. Co.
Williams Oil-O-Matic Heating
York Mechanical Cooling





FASTER SCHEDULES AT LOWER COST

These days it isn't news when records are broken for speedy construction. But it *is* news when, in straining and crowding to save every possible minute, money is also saved. And that is precisely what 'Incor' 24-Hour Cement helped to accomplish in speeding completion of ten Texas Centennial Exposition buildings at Dallas. For example: In the sixty-foot monolithic tower (above) and in entrance gates, 'Incor' provided working strengths at least five days sooner than ordinary concrete on each pour; 'Incor' piling for the Hall of State, cast and driven during late Fall, overcame cool weather curing delays, reduced form costs, saved many days on driving schedule.

The Exposition's Museum of Fine Arts Building illustrates what these savings mean when translated into dollars and cents. Using 'Incor,' the contractor stripped forms from first half of floor slab in two days, re-used forms on second half. That saved an extra set of forms—lumber worth $1250, plus $300 for labor. 'Incor' also reduced overhead costs, by eliminating ten days of non-productive time at $100 a day. Total saving, $2550. Extra cost of 'Incor,' $272.70. Net saving, $2277.30.

Faster schedules with 'Incor' have helped to solve many an emergency problem. But it goes much deeper than that; for 'Incor'* usually saves money on any job—whether rush or not—by eliminating non-productive time waiting for concrete to harden. For details, write for free copy of new book entitled "Cutting Construction Costs"—address Lone Star Cement Corporation (subsidiary of International Cement Corporation), Room 2209, 342 Madison Avenue, New York. *Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT

ADVERTISING INDEX

SEPTEMBER 1936

Aerofin Corporation 50
Air Reduction Sales Company 32
Alberene Stone Corporation of Virginia 249
Allis-Chalmers Manufacturing Co. 87
American Blower Corp. 49
American Brass Company, The 10
American Gas Association 7
American Radiator Company 29, 86
American Telephone & Telegraph Co. 27
Armstrong Cork Products Company 15
Auditorium Conditioning Corporation 52

Barber Asphalt Company, The 18
Barber-Colman Company 254
Barrett Company, The 5
Berry Brothers 82
Bridgeport Brass Company 25
Burnham Boiler Corporation 68
Butler Manufacturing Company 84

Case & Son, W. A. Manufacturing Co. 82
Celotex Corporation, The 19
Church, C. F., Mfg. Co. 84
Columbus Coated Fabrics Corporation 36
Congoleum-Nairn, Inc. 251
Consolidated Air Conditioning Corporation 11

Delco-Frigidaire Conditioning Corporation 253
Detroit Steel Products Co. 39
Drake Hotel 82
Dunham, C. A., Co. 246

Eagle Pencil Company 21
Eagle-Picher Lead Company, The 247
Electric Storage Battery Co., The 245
Electrolux Refrigerator Sales 6
Elkay Manufacturing Co. 80

Formica Insulation Company, The 12
Fox Furnace Co., The 24
Fulton Sylphon Co. 61

Gar Wood Industries, Inc. 80
General Electric Company ..... 92, Cover IV
General Insulating & Mfg. Co. 86
Goodyear Tire & Rubber Co., Inc., The 59

Harnischfeger Corporation 33
Henry Furnace & Foundry Company, The 36
Hoffman Specialty Co., Inc. 75
Holland Furnace Co. 45

Ilg Electric Ventilating Co. 63
International Cement Corporation 89
International Nickel Company, Inc., The 81
Iron Fireman Manufacturing Company 69

Johnson Service Company 26

Kawneer Company, The 37
Keasbey & Mattison Company 47
Kelvinator Corporation 43
Kinnear Mfg. Co., The 84
Kleensan Corporation 77
Koh-I-Noor Pencil Co., Inc. 70
Koppers Products Company 73

Libbey-Owens-Ford Glass Company 17
Lightolier 80

Masonite Corporation 2
Medusa Products Company 72
Minwax Co., Inc. 248
The Monmouth Products Co. 54
Muralo Company, Inc., The 48

National Lead Company 51
Nelson, Herman, Corporation 58
New Haven Copper Company 64
Norton Door Closer Co. 42

Otis Elevator Company 38
Owens-Illinois Glass Company 91

Pecora Paint Company, Inc. 60
Pierce Butler Radiator Corp. 65
Pittsburgh Plate Glass Company 53
Portland Cement Association 55
Powers Regulator Co., The 74
Procter & Gamble 255

Reardon Company, The 40
Red Cedar Shingle Bureau 28
Republic Steel Corporation ..... Cover II
Resinous Products and Chemical Company, Inc. 44
Revere Copper and Brass, Incorporated 78, 79
Richards, George C. 71

Safecote Electrical Conductors 71
Sisalkraft Company, The 74
Sloane-Blabon Corporation 57
Smyser-Royer Company 72
Sonneborn Sons Inc., L. 35
Surface Combustion Company 8

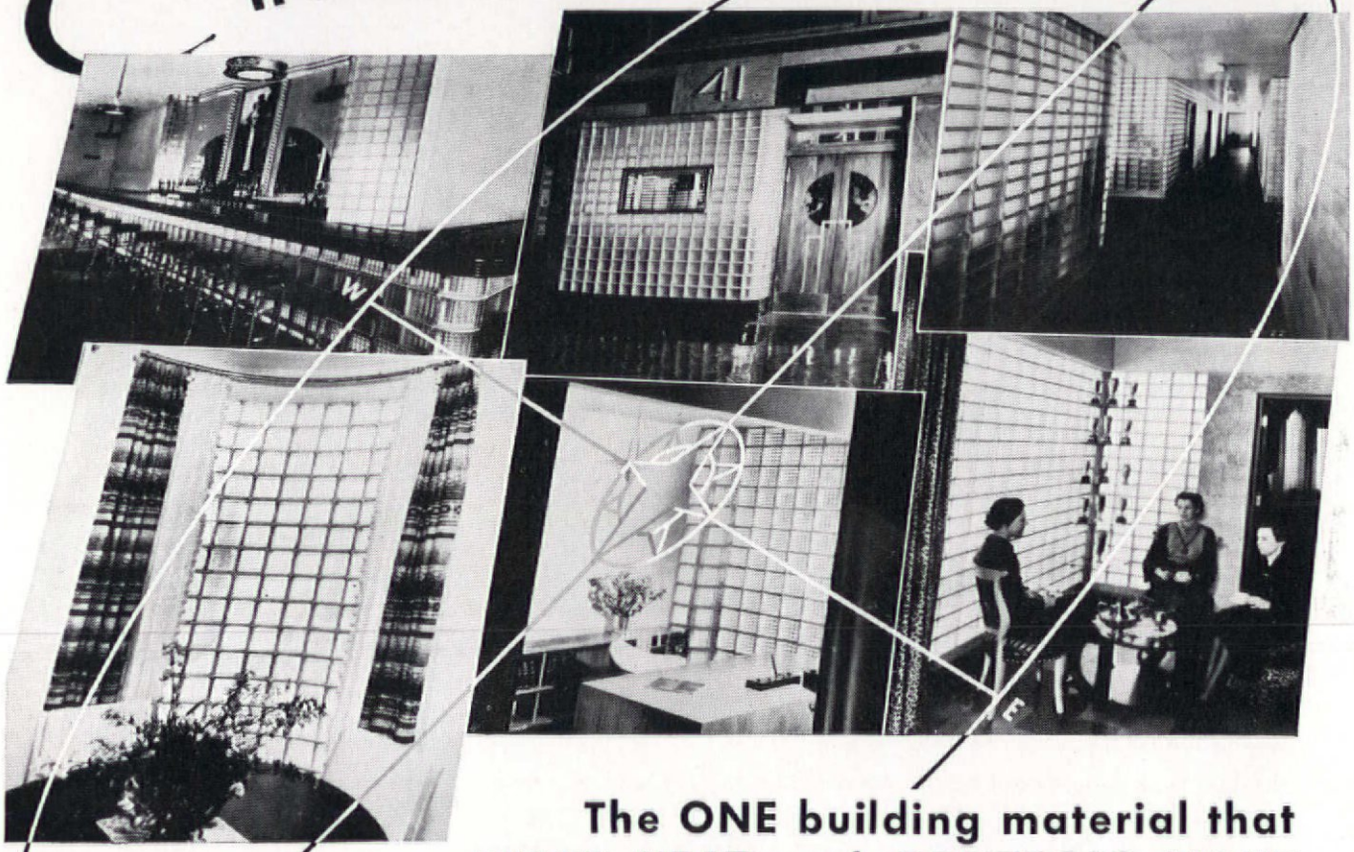
Trane Company, The 23
Truscon Steel Company ..... Cover III

United States Gypsum Company 31, 41, 62, 85
United States Plywood Co., Inc. 250

Vermont Marble Company 56
Vitrolite Division 17
(Libbey-Owens-Ford Glass Company)

Warren Telechron Company 16
Waterfilm Boilers, Inc. 66
Webster, Warren & Co. 256
Western Electric Company, Inc. 86
Westinghouse Electric & Manufacturing Co. 83
Whiting Corporation 20
Williams Oil-O-Matic Heating Corporation 46
Wood Conversion Company 67

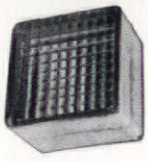
Everywhere it's GLASS MASONRY



The ONE building material that STOPS HEAT and CONTROLS LIGHT

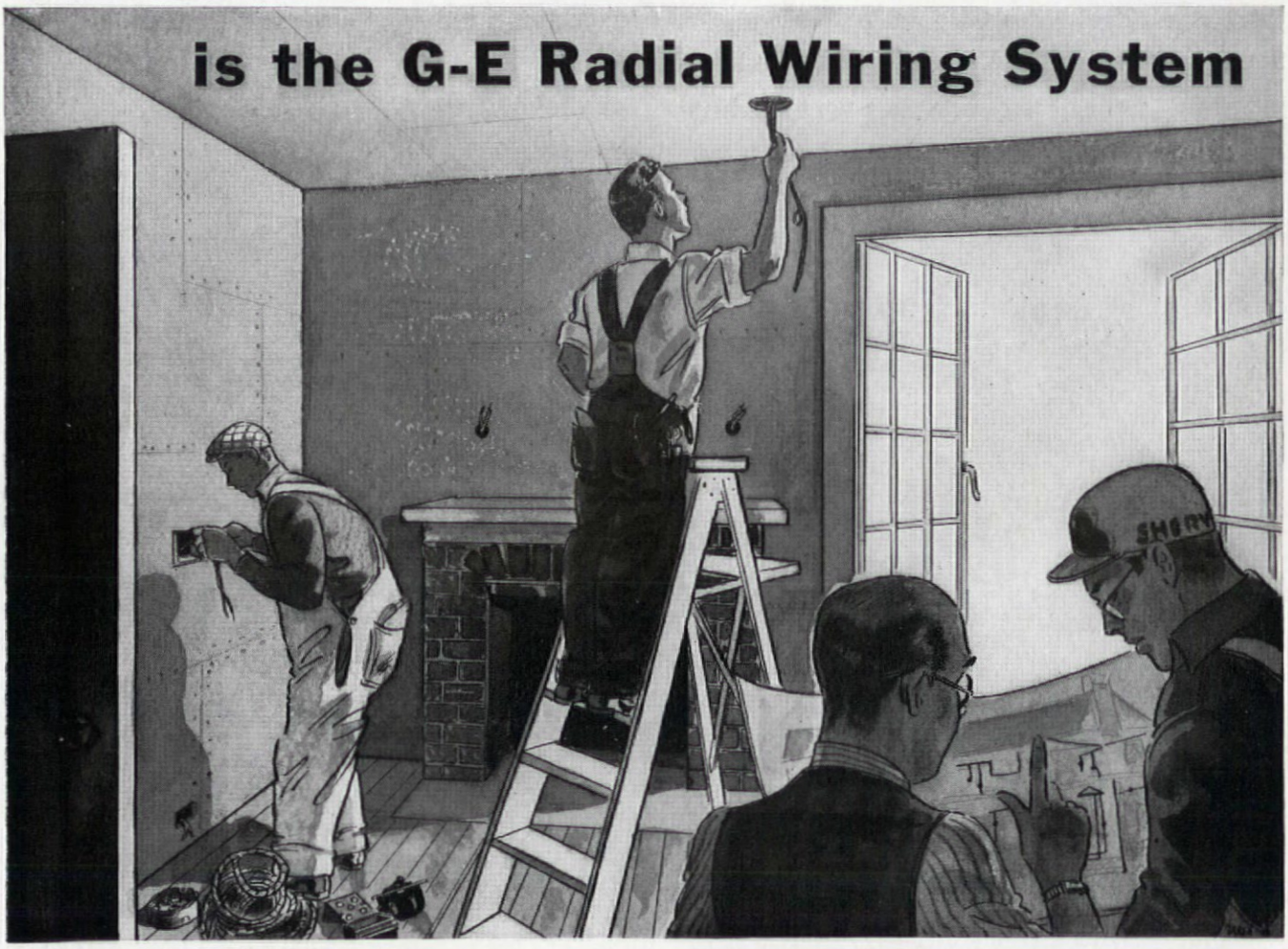
◆ Men of vision in this day of great building activity are seeking new and improved materials. That's why everywhere they are considering Owens-Illinois Glass Masonry. Depending upon the face cutting, Insulux transmits up to 86.5% of light falling upon it—without glare. With approximately 50% vacuum, Owens-Illinois Glass Masonry is proving an efficient material where air conditioning is important. Then, too, its design possibilities are unlimited and lend themselves admirably to modern construction. Fire resistant, sound deadening, strong, clean—the ideal material for modern building. Owens-Illinois Glass Company, 308 Madison Avenue, Toledo, O.

Insulux

OWENS-ILLINOIS  **GLASS MASONRY**

THE REAL BEGINNING OF A HOME

is the G-E Radial Wiring System



Whether mansion or cottage, the installation of the wiring system marks the real beginning of a modern home. On it depends the home's convenience and comfort, economy and safety.

To make them available to every home, General Electric designed the Radial Wiring System. From the hundreds of installations in G-E "New American" Homes, its value has been proved. Your clients after reading about and visiting such model dwellings, demand all-electric homes. And they are possible only if the wiring system is adequate.

The G-E Radial Wiring System is adequate . . . adequate in copper sizes, number of circuits, switches and convenience outlets. It is easy to specify and install. This wiring system assures efficient operation of all appliances. For complete details refer to "Sweet's 1936 Catalog" or "American Architect Time Saver Standards"; or write for "The G-E Radial Wiring System Reference Manual For Architects." Address Section CDW-1310, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

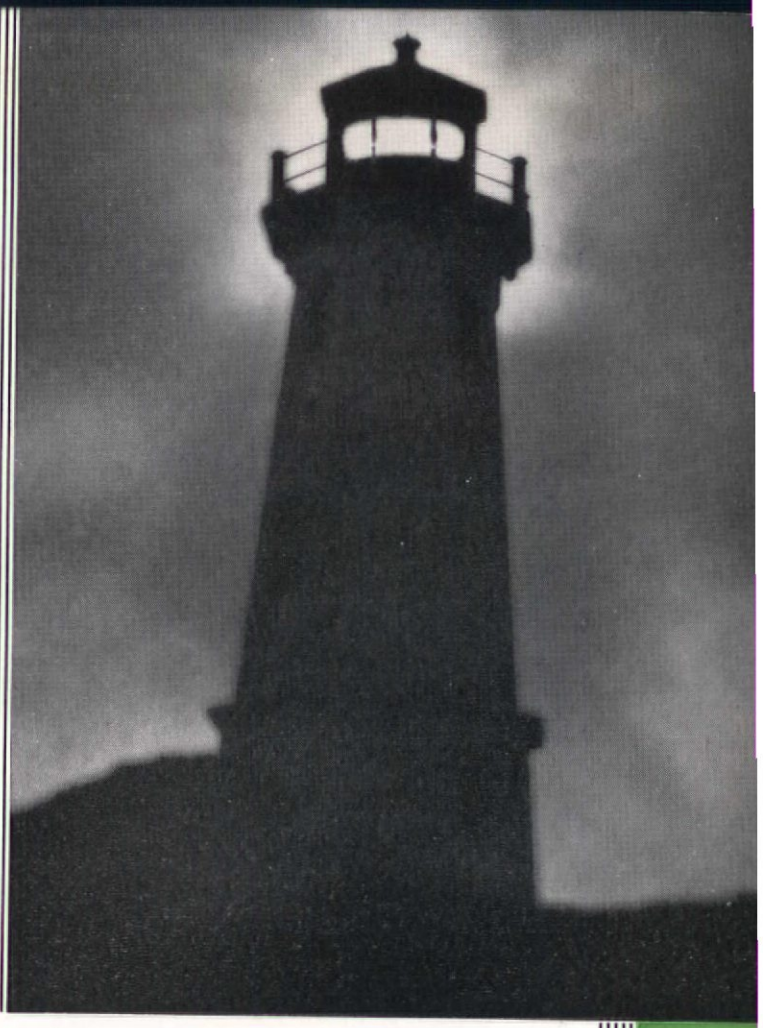
WIRING MATERIALS

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONN.

where

GUIDANCE

is dependable



Mariners look to the lighthouse for guidance. None question its dependability because all know its service is impartial. Similarly, you can look to Truscon for unbiased guidance in the correct selection of steel windows and doors. The reason is plain. Irrespective of your requirements for type, for size, for method of operation, Truscon can guide you to the correct selection to meet your needs exactly. No reason exists for "compromises."

In addition to a complete line, Truscon maintains a nation-wide organization of steel window and door specialists. Where required, Truscon will function on every detail including installation, adjusting and final inspection.

See "Sweet's" where 63 pages of Truscon's 80-page catalog are devoted to Truscon Steel Windows and Doors. Other catalogs, recently published, are available at no cost to you. Every Truscon catalog is a practical guide.

Turn to Truscon for any standard or special steel window or door requirement and experience that satisfying assurance of receiving impartial, *dependable* guidance.

NOTE THE FAR-REACHING SCOPE OF THE TRUSCON LINE OF STEEL WINDOWS AND DOORS

STEEL WINDOW PRODUCTS

Casements and Casement Screens . . . Architectural Projected Windows . . . Commercial Projected Windows . . . Casement Projected Windows . . . Double-Hung Windows . . . Donovan Awning Type Windows . . . Pivoted Windows . . . Utility Windows . . . Continuous Windows . . . Detention Windows . . . Basement Windows . . . Steel Sub-Frames . . . Mechanical Operators . . . Pressed Steel Lintels . . . Coal Chute Doors . . . Many Others.

STEEL DOOR PRODUCTS

Swing and Slide Doors . . . Bifold Doors . . . Canopy Type Doors . . . Overdoors . . . Accordion Type Doors . . . Vertical Lift Doors . . . Morgan Canopy Doors . . . Vertical Lift-Swing . . . Telescoping Canopy . . . Original "Kanopy" Type . . . Airplane Hangar Doors.

Truscon Steel Company

YOUNGSTOWN, OHIO

NOW! THE FIRST COMPLETELY MODERN SINK



G-E DISHWASHER SINK AND DISPOSALL

DISPOSES OF KITCHEN REFUSE—WASHES AND DRIES THE DISHES—ELECTRICALLY!

● General Electric presents the latest contribution to Better Living—the G-E Dishwasher Sink and Disposall—an amazing new electric sink that disposes of kitchen refuse right down the drain and washes and dries all the dishes! It is available in various sizes and types to meet the requirements of every design for new or modernized kitchens.

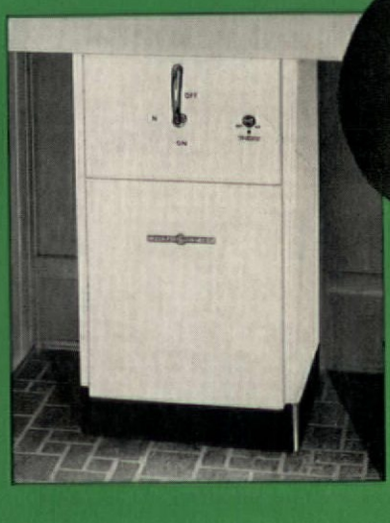
The Disposall unit reduces kitchen refuse to a thin pulp and flushes it out the drain. Food scraps, fruit and vegetable peelings, coffee grounds, egg shells, bones, etc., go directly into the drain opening and instantly disappear. No more messy accumulation of garbage in the sink, no more trips to the garbage can, no more garbage! The Disposall unit is thoroughly sanitary, free from odors, and costs less than a penny a day to operate.

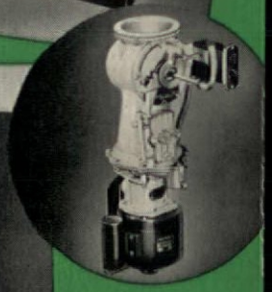
The Dishwasher unit washes all the dishes, glassware, silver, pots and pans hygienically clean in less than 10 minutes for less than 1c a day. No danger of chipping or breakage. The dishes dry in their own heat—no wiping is necessary.

Here is the first *completely* modern kitchen sink! At its moderate cost, and because it introduces totally new standards of sanitation, convenience and better living, the new G-E Dishwasher Sink and Disposall belongs in every modern home in America—in every new plan for a modern kitchen. Descriptive literature and detailed specifications may be obtained from your nearest G-E Home Appliance Distributor, or write direct to the Appliance and Merchandise Dept. of General Electric Co., Sec. CG9, Nela Park, Cleveland, O.



G-E DISHWASHER available separately in individual cabinet or sink type models—a size and style for every kitchen plan.





G-E DISPOSALL available separately in cabinet model or individual unit that may be easily and quickly attached beneath any kitchen sink

GENERAL ELECTRIC